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ABSTRACT

The proceedings from the special study institute for teachers of deaf-blind children contain seven conference papers. Topics covered include early child growth and development, aspects of the diagnosis and evaluation of deaf-blind children, normal language development, and stimulating the hearing, vision, and motor development of deaf-blind children. In addition, comments concerning implications for future planning and summarizing the Institute discussions are included, as are lists of both Institute speakers and participants. The Conference for Teachers of Deaf-Blind Children was sponsored by the Southwestern Region Deaf-Blind Center and held at Berkeley, California, June 22-24, 1970. (KW)

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PROCEEDINGS OF A SPECIAL STUDY INSTITUTE

Conference for Teachers of Deaf-Blind Children

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CALIFORNIA STATE DEPARTMENT OF EDUCATION
Wilson Riles, Superintendent of Public Instruction, Sacramento, 1971

PROCEEDINGS OF A SPECIAL STUDY INSTITUTE

Conference for Teachers of Deaf-Blind Children

Held at Berkeley, California

June 22-24, 1970

Philip Hatlen
Institute Director

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WILLIAM A. BLEA, Project Director

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INTRODUCTION

Philip H. Hatlen
Associate Professor of Education
San Francisco State College

About one year ago, an institute on services to deaf-blind preschool children was held in San Francisco. It was a national institute, and while speakers and participants represented many areas of the country, by far the greatest number of those in attendance were from California and the western states. At almost the same time, Dr. William Blea was appointed director of the Southwestern Region Deaf-Blind Center, to be headquartered in Sacramento. These two events marked the beginning of region-wide communication and concern for services for deaf-blind children. We have come a long way in the past year. When one considers the extent of services to deaf-blind children during the 1968-69 school year and compares that to what we have watched grow and develop in the 1969-70 year, it is not difficult to become excited about the progress that we have experienced in this region. There is no question but that much of what has happened to all of us here has been directly related to the initiation of the Regional Center in Sacramento. More directly, it has been the work of Dr. Blea, the Center's Director.

We have witnessed during this past year perhaps the most concerted effort at case finding of any one group of children in the history of education of the southwestern states. We have also benefited from the continuation of some of the finest, most careful diagnostic evaluations of children. And, in addition, direct services to deaf-blind children have expanded beyond what we had any right to expect when compared to the normal process of the development of services for children. The impetus and leadership for these advances in services to deaf-blind children from case finding to direct services has been provided by an energetic, highly qualified, very dedicated man who, though he has been in his position for just a year, has made such an impact on all of our professional lives. This institute is also the direct result of Dr. Blea's concern regarding communication among professionals working with deaf-blind children in the four southwestern states.

Dr. Blea and I share a very deep mutual concern about the necessity for close lines of communication between teachers of deaf-blind children. Your job can be a very lonely, very isolated position because you may represent the only teacher working with a particular group of children in a wide geographic area. There are two reasons why periodic institutes, we believe, are a professional necessity. First, it affords us an

opportunity to share experiences, successes and failures far better than any other technique at this time. In the future, as we gain expertise in working with these children, as some of us become involved in writing, there may be professional literature available to help teachers in providing educational services to deaf-blind children. But at the present time, we must gather together periodically so that we are not compounding our mistakes or duplicating efforts.

The second reason is this aspect of isolation. We are a comparatively small group of people. There are no more than a handful of us as compared to the vast number of professionals working in educational services for all children. We are spread thinly and many of us lack the moral support and the opportunity to discuss our experiences with a teacher in the classroom next door or even another teacher in the same school district.

Our program for this institute has been divided into several categories. We gave a good deal of thought to whether at this point in our professional development it would be more advantageous to have participants in various programs speak regarding their particular service to deaf-blind children, or whether we should decide on several topics which we felt would be of interest to all of you. We decided on the latter, because simple reportings on a number of programs tends to become redundant, and while valuable, can be probably shared in small group discussions much more effectively.

You will note by the program that on the first day we are going to be dealing with two specific areas of interest and concern. First, the morning will be spent on the topic of early child growth and development. This is a subject that is often discussed and needs to be explored further by any group of professionals working with children who are developmentally operating on an infant or preschool level. On Monday afternoon our discussion will focus on techniques for diagnosis, evaluation and measurement of deaf-blind children. You will note that we have representatives from both diagnostic schools in California because these two schools have been real pioneers in diagnostic evaluation of deaf-blind children.

On Tuesday morning the theme will be normal language development from which we hope to make associations to the problems which we all share in the language development of deaf-blind children. As is true of the topic related to early child growth and development, we felt it would be desirable to invite a speaker not directly involved in services for handicapped children so that we may look upon the area of language development in broader perspective. On Tuesday afternoon we will have presentations covering the areas of hearing and vision and ways in which these two sensory modalities may be stimulated in children who may have residual hearing or vision.

On Wednesday morning the discussion will center on motor development and mobility needs in deaf-blind children, an area of concern to many of us, since some of the children with whom we are working are having difficulty in learning to walk. The afternoon on Wednesday will be a more general presentation with representatives of various programs reacting to the topics presented at the institute.

As you will note from the program, there will be several opportunities for small group discussions, as participants in former institutes have impressed upon us the desirability to share experiences and information in informal ways in small groups. There have been suggestions made that institutes should be programmed entirely around small group discussions and that general speakers should be held to an absolute minimum, if included at all. While we gave some consideration to this possibility, it was felt that there were a few particular areas which needed presentation by experts and from which all of us could gain. Therefore, we hope that you will find that this program incorporates general sessions and small group discussions in a balance to your liking and enhances this opportunity to get together.

As I look at all of you attending the conference, I cannot help but consider the very grave responsibility we have to serve to the very best of our professional ability a relatively small segment of the population of children in the schools today. I do not believe that any group of children has ever before had the benefit of so much time, effort and money spent on them as are the deaf-blind children in our country today. We have the means, we have the dedication, we have the commitment, and now it is our responsibility to produce.

WHEN NORMAL GROWTH AND DEVELOPMENT IS DISRUPTED

Mary B. Lane
Professor of Education
San Francisco State College

I am not an expert in special education. The only merit in having me open this conference is to help see your work through the eyes of a generalist.

The first question that must be raised is, "What is normal?"

Do you consider yourselves normal? I dare say each of us could be put in a situation where we could not function normally. Each of us has some disabilities that limit our capacity to relate, to produce, yet we all feel "normal." This is the crux of the problem we face in special education - to so help that parents see their children as capable and normal - so that children see themselves that way, insofar as possible; and that teachers broaden their understanding of what is normal and what can be accommodated in the classroom.

I sometimes think that the motive of some teachers is to refer out of their classes all of the children who need teaching. Those remaining would progress anyway, and life is very simple that way.

You, special education teachers, are experts in individualizing instruction, and so are more in tune with creating methods for utilizing the remaining senses, when growth and development is disrupted, than are the rest of us.

Let me spend a few minutes briefly sketching what takes place in growth and development in the early years, and then to dare to suggest some necessities when the growth and development is interrupted. The infant is born helpless, with a nervous system ready to be hooked up, but with undifferentiated capacities. During the first few weeks of life, the infant is busy beginning to learn about this world he has been thrust into. He grows from a relatively undifferentiated state at birth to one in which, at age two, considerable organization and integration of eye, hand, ear, voice, and motor equipment has occurred. We generally call this maturation, and while the infant is achieving a state of differentiated response to his environment, a symbiotic relationship is developing between the infant and the caring person, which is usually the mother. The infant learns his mother's footsteps, her smile, and the sound of her voice. He gives her a response which is pleasurable to her and thus elicits further response from her. Thus is begun the humanizing circle of response-ability that is the most vital ingredient in both growth and development.

As the baby grows, the quality of maternal care he receives is of serious and life-long significance in how the child develops. Erikson has pointed out that from the dependability of maternal routines in caring for the baby, the child develops trust or mistrust, and that this kind of development comes during the first six or eight months of the baby's life. So the first necessity for a positive self-concept is to grow up with trusting adults - adults whom he can trust and who help the child develop trust in his own impulses. If a child lacks this, he learns mistrust of his world and becomes mistrusting of adults and of himself. The film Maternal Deprivation vividly depicts this phenomenon. A child who has had too many separations in his first two years often fails to grow physically, and oftentimes he dies.

How is this trust communicated? Dr. Cohen in speaking to the American Medical Association said, "Tender, loving touching may be one of the most important things we can do for a baby. His soft skin is perhaps the part of the body by which he experiences his first great learning about his strange outside world. The skin-learning, or lack of it, apparently can be important as to how the baby grows up. Skin contacts are the first sole means of communicating security and affection, a need as great or even more important than the feeding process. What a child feels, from all senses during the first six months of life may have its greatest impact upon the child's evolving personality and physiology."

Let us examine the concept of mutuality that develops between infant and parent. I would like to quote Sally Provence: "The complexity of transactions between parent and child is very remarkable, even during early infancy. Mother and infant adapt to one another more, or less, well; they become attuned to each other's moods and 'read' one another more, or less, effectively. We are accustomed to thinking of the influence of parental attitudes and behavior of the child's development. We must also be aware of the infant's influence upon his parents' development and behavior."

Now let's think a bit about what happens when the mother learns her baby is blind or deaf.

In the first place many of the cues that infant gives mother, such as that special smile or that delighted gurgle, are lacking. And the cues that mother gives the infant are missing. Frequently the depression of the parent is so deep and of such long duration that she is incapable of giving the baby the cues he needs during the crucial phase of development. Thus, instead of a life-giving cycle of response-ability being established, we find a cycle of withholding, which blocks the development of both mother and infant. The results you are all too familiar with, so I will not elaborate upon them.

Most of the reading that I have done indicates that much of the "severe ego disturbances and cognitive deficits commonly found among blind children have their origins in the first 18 months of life during the critical period of ego formation." (Fraiberg, p. 121)

Fraiberg in her extensive work with blind children says that "promoting the love bonds between the baby and his parents is their greatest task...that no education strategy can succeed if a baby has not found meaning in his world through his human partners, and if he is not bound to this world through affectional ties to his parents."

When normal growth is disrupted, parents tend to overprotect or to reject. Most professional help, to date, has been of little value to them since the advice that has been given has been of such a cliché kind, like, "treat a blind child like a normal child," that parents have not known how to translate this into daily living practice. The work that Phil Hatlen and Eileen Jackson have been doing has contributed much to fill in these gaps, and they should be making this speech.

The second developmental phase in the child's life that comes as he gets up on his two feet and takes a vertical position is what Erikson calls autonomy. Along with autonomy comes the possibility of shame and doubt. This is the time when a child develops a great sense of "I can," "I will." "I will do this myself" is a familiar phrase, when you try to help a two or three-year old. I have a very dear friend who has a delightful two-and-a-half year old who held five adults in the palm of his hand one night in the most beautiful demonstration of autonomy that I have seen. He and his mother started to sing together and little David said he would sing the song himself. There had been children to dinner and they had been sitting around a low table. David gets up on top of the low table, and stands up there with all his 28 inches, and made ready to sing this song to us. But when he got up there and looked at these five adults he didn't quite have the courage to do it. So he said, "Close your eyes." So we all closed our eyes and David began to whisper the words - you could just barely hear them. We made some comment about the fact that it was a song from a long way off. Little by little David got a little stronger and then a bit stronger, and finally he sang the song. And then he (this was a tremendous experience for this child) wanted to do some more of it. This time though, again he got this "sinking" feeling. So he said, "I'll close my eyes too." So he stood up there with his eyes closed tight and we with our eyes closed tight and sang to us. This experience so important to David's life could have been so easily damaged by an interfering adult.

Then comes a bit later in the child's development what

Erikson calls the state of initiative. This is also the time when the child is beginning to develop a sense of the other person; and so he has the opportunity now to feel guilt. This is the time when intrusive activity characterizes the child's life. He has learned to walk, he has quite good command of his muscles, and probably he has learned language to some degree. He knows he is a person, he has some sense of identity, and he begins to try to find out what kind of person he is. He is ready for an expression of his imagination and for more complicated exploring and discovery. This is a time when sex identification usually matures.

Now we must remember that each developmental stage builds on the previous one. So if trust is impaired, that is where we must start in our work. It means that much of the activity which is going on goes back to that period of a child's life, although the chronological age may tell us that he is much older.

We cannot overemphasize the importance of the first two years in setting the limits of growth of any child - especially so the deaf-blind child.

Let me just cite some rather discrete but, I believe, meaningful data that validates the importance of what happens in infancy. As early as four months, lower-class babies vocalize significantly less than middle-class babies. (Kagan) By 18 months of age, intellectual inferiority of the child of poverty becomes evident. (Bayley & Deutsch)

Reliance on non-verbal, implicit modes of communication deters language fluency. Verbal facility is the best predictor of later intelligence (Bayley) and of school success. The child who lacks a model for language development will be deterred in many ways.

Visual attentiveness in infants is highly and positively correlated with the amount of handling by the caretaking person. Korner and Grobstein (1967) state that an infant's eyes are open 90% of the time when the infant is being held and only 25% of the time when the infant is left unhandled or is moved to a sitting position. Visual curiosity then is a most important component for deaf children. We can extrapolate about what may happen in terms of mental activity even if the child is blind. Without intensive exchange between the infant and his environment during the sensory-motor period (18 months), there will be impairment of later adaptation and of intellectual growth.

There is agreement on beginning early in teaching deaf-blind children from birth - but what should be done and how is still very sketchy.

It is easy, for instance, to say that when one sense is

impaired the other senses must be further developed to take on the functions of the impaired sense. But some work seems to indicate this is a generalization that has many falacies in it; that, for instance, hearing cannot be substituted for sight. Rather, a detailed sequence of experiences needs to be developed for the blind infant that helps him integrate the sound of the human voice with tactile intimacy that means comfort, warmth and security for him. And these experiences must come in many contexts and at the optimum "phase time" of development if they are to be of greatest value to the infant.

Burlingham states that the blind child becomes more quiet as he responds, for he is listening. The intentness of the listening is a clue to the strength of response. Many parents do not understand this and become very depressed because of the lack of response of their infants.

Finally, I shall try to draw together the few suggestions I was able to find that give hope for practical help. Most of these come from Fraiberg:

1. Since the mother-child relationship is so important and the mother is frequently so devastated, the role of the teacher must be considered as much one of working with parents as it is helping children. This requires a different kind of training, perhaps, and more extensive training than has been usual.
2. Teachers of deaf-blind children must help establish expectations of themselves and of parents which are realistically possible. This means accepting the child as he is now and showing him the same respect as one would show any other human being. Short-term, possible steps need to be articulated so that parents and children may be able to taste success.
3. Parents need demonstrations of how babies may be handled in ways that are stimulating growth. They often feel embarrassed about talking to a baby who can't hear, or smiling at a baby who can't see. Yet this kind of treatment in context of feeding, changing, comforting, is necessary. The association must be made in the baby's being.
4. Help blind babies take the necessary growing steps, such as self-feeding by using finger-food on trays - drinking from cups. It is messy, but necessary for grasping development. Learning to eat solid food is necessary for the blind baby's growth.
5. Object manipulation must be stimulated. It should be introduced early in a limited space. Cradle gyms with

sound for blind babies are recommended, and bright colors for deaf babies. Different textures are important. A play table with a built-in seat and a three-sided broad surface with rail is a practical way to introduce objects for the blind - sound, textural interest, simple design are important. Real objects, not miniature, are necessary. Common household items are of great help. "We are struck with the difficulties of the blind child, both in projecting and generalizing human characteristics and in making inferences from small scale replicas of familiar objects in his daily life. We are impressed to see how much learning through toys is denied the blind child during the period when he needs to construct an object world.

"We are beginning to discern some of the ways by which the blind child does construct the object world. We have noticed that the blind baby has little difficulty generalizing across size and shape of 'real' objects. Kathy, at a little more than two years, has a stable mental representation of 'chairness' which ranges from her father's big armchair through all varieties of chairs in her house. She can instantly label 'chair' a child-sized chair of a design she has never encountered.

"At this same time, in December, she was tested for a generalized representation of a 'Christmas tree', using a small, imitation Christmas tree. She showed no recognition of the object, and when it was labelled 'Christmas tree' she seemed only puzzled and finally said in a soft voice, 'Feels like Bwash.'

"Through observations like this, it is learned that the blind baby needs much more experience with his 'real' environment before he can bridge gaps that include, not only size differences but other differences that have no correspondence in his experience."

6. Midline Training is vital. This can be begun by placing the bottle in the baby's hands in front of him.
7. "Reach on sound cue" alone usually occurs before creeping occurs. This should be emphasized with parents and can be developed with blind babies by placing a favorite toy just beyond reach.
8. We must work with parents diligently on motor development since there is much anxiety about this. This can be encouraged by placing the baby in a variety of body positions and stimulating motor activity through exercises.
9. Staff needs to be noncoercive, but not afraid to speak

with authority and encouragement. Teachers of this quality are the ones who seem to obtain the greatest growth in spite of tremendous odds.

Buoyancy, hope, optimism, an ability to see the tremendous array of human gifts that are needed in the world - an ability to cherish some of the more intangible gifts of humor, courage, persistence, and love - these are the necessities with which you are so familiar. Bless you in what you do for us.

BIBLIOGRAPHY

1. Erikson, Erik H. "Identity and the Life Cycle," Psychological Issues, Vol. 1, No. 1, Monograph 1, 1959.
2. Blakeslee, Alton (Reporting on Dr. Cohen's speech in San Mateo Times), June 2-4, 1965.
3. Berlin, I. N., and S. A. Suzurek (Editors). Learning and Its Disorders. Palo Alto: Science and Behavior Books, Inc., 1966.
4. Buhler, Charlotte; Faith Smitter; Sybil Richardson and Franklyn Bradshaw. Childhood Problems and The Teacher. N. Y.: Henry Holt & Co., 1951.
5. Burlingham, Dorothy. "Hearing and Its Role in the Development of the Blind," Psychoanalytic Study of the Child, Vol. XIX, 1964, pp. 95-112.
6. Fraiberg, Selma; Marguerite Smith and Edna Adelson. "An Educational Program for Blind Infants." Journal of Special Education, Vol. 3, No. 2, pp. 121-131.
7. Meier, John and Leslie Seguer. "An Educational System for Developmentally Disabled Infants." Presented for Council for Exceptional Children, Dec. 1969.
8. National Association for Education of Young Children. What We Can Learn from Infants. Washington, D. C., 1969.
9. Robbins, Mark and Gertrude Sternquist. The Deaf-Blind "Rubella" Child. Perkins School for the Blind, Watertown, Mass. 1967.
10. Ross, John R. Sr.; Bernard B. Braen and Ruth Chaput. "Patterns of Change in Disturbed Blind Children in Residential Treatment," Children, Vol. 14, No. 6, pp. 217-222.
11. San Francisco State College. Effects of Pre-School Service for Deaf-Blind Children (Proceedings of Special Study Institute). Department of Special Education, 1969.

A PRELIMINARY REPORT OF AN OBSERVATIONAL INSTRUMENT FOR
RECORDING THE BEHAVIOR OF PRESCHOOL DEAF-BLIND CHILDREN

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San Francisco State College is currently engaged in an experimental education program combining classroom and home instructions for preschool deaf-blind children. The project is funded by the U. S. Office of Education and is designed to cover a two-and-a-half year period, with the operation of the school program being for two years. The principal investigator is Miss Eileen Jackson, with Mr. Philip Hatlen serving as co-director.

The purpose of the project is to develop a curriculum involving parents and teachers in working with deaf-blind preschoolers. While most educational programs depend upon the parents' bringing or sending the child to an institution or agency, this program combines a classroom teaching situation with home teaching.

Children falling into one of the following categories were considered eligible for admission in the program:

1. Children who have a profound learning loss and who are legally blind as far as medical diagnostic procedures can determine.
2. Children whose primary handicap is hearing impairment but who have enough of a visual loss so that they are unable to benefit from educational programs for deaf children.
3. Children who are legally or partially blind but who have a hearing loss which prevents them from participating in educational programs for the blind or partially seeing.

The children must be of preschool age and not enrolled in any other program.

The project began in September 1969; the first year of school has just concluded. The classroom is located in the First Congregational Church in Berkeley. School is currently held from 9:30 a.m. to 1:00 p.m., Monday through Thursday. Afternoons are devoted to home visits. The head teacher is assisted by parents, San Francisco State students enrolled in special education programs, and special consultants and specialists. There are seven children currently enrolled in the program. All are boys and all but one are deaf and blind because their mothers contracted

rubella in the early months of pregnancy. The six rubella children range in chronological age from 4 years 5 months to 5 years 9 months. The other child is younger, being 3 years 9 months.

One of the objectives of this project is to develop assessment instruments for use in making status assessments of the children as well as detecting growth during the project period. To this end the research staff has put considerable emphasis in the development of instruments.

One instrument, which will not be reported here, is a scale designed for teacher and parental use in rating a child on items in the areas of self-help, manipulation, ambulation, social communication, and cognition. To this point a preliminary form of this scale has been used in rating the children in this project. It is hoped that ratings on many children can be obtained in order to further develop this scale into a useful evaluational device for very young multiple sensory impaired children.

A second instrument, which will be described here, is an observational rating device that permits the recording of a child's behavior in the school setting. After considering many approaches, it appeared that the most useful device would be a multi-dimensional time sample observational instrument which would permit ratings of individual children and the adults who come into contact with them during their school experiences. The observational instrument has undergone five revisions, each revision resulting in an increase in clarity of definitions and reliability of ratings.

In its present experimental form this instrument yields ratings on a wide range of variables. There are a number of categories within each variable among which the observer is to choose one as the most representative of the child's behavior during the rating period. The variables and their categories are listed below:

Type of Experience the Child is Having

Categories: None, Sensory, Manipulative, Large Muscle, Social, Cognitive, Creative, Other

Child Involvement Level

Categories: None, Low, Medium, High

Other Direction

Categories: None, Helps, Instructs, Prohibits

Person Involved

Categories: None, Teacher, Assistant Teacher, Parent, Other Adult, Other Child

Activity Level

Categories: None, Low, Moderate, High

Mobility

Categories: Prone, Sitting, Crawling, Standing, Walking
Supported, Walking Unsupported, Running-climbing

Self-Direction

Categories: Low, Medium, High

Cognitive Behavior

Categories: None, Repetitive, Aimless-random,
Exploratory-nondirective, Purposive-goal Directed,
Experimental, Problem Solving

Expressive Communication

Categories: None, Physical, Voice Projection, Gestures,
Speech

Affect

Categories: Anger-protest, Unhappiness, Mild Happiness,
Happiness, None or Inappropriate

The observational instrument has two rating sheets: one for use in situations in which the child is provided with "Directed Learning Experiences" and one for "Unstructured Learning Experiences." Thus, the first decision an observer must make is whether the child's experience is directed or unstructured.

The observation rating form for "Directed Learning Experiences" differs slightly from that for "Unstructured Learning Experiences" in that an additional variable is included to permit ratings on "Type of Experience That Has Been Planned For the Child." This permits differential ratings to be made on this variable and on "Type of Experience Child is Having." This distinction is necessary for rating situations where the child is having a different type of experience than that planned by the adult. For example, a teacher may be attempting to provide the child with a cognitive experience but is unsuccessful in involving the child in it. Rather, he may be having a sensory experience with the materials provided.

In addition, the observation rating form for Unstructured Learning Experiences does not provide a category titled "Instructs" on the "Other Direction" variable.

A behavioral rating unit is one minute. During this period the rater observes the child for the first thirty seconds - he uses the second thirty seconds to record his ratings on the appropriate observation record form. Every variable is rated during each minute. Fifteen continuous minutes of observation and rating have been found to be an appropriate time period for sampling behavior, although the rating instrument permits any number of observation units to be recorded.

To facilitate the rating process, the variables are paired on a grid, one variable being on the horizontal axis and one on the vertical axis. By placing one tally mark in the grid the observer provides ratings on two variables. Thus, six tallies - one in each of six grids - provide a rating on twelve variables. An example of one such grid is presented below:

PERSON INVOLVED	None	OTHER DIRECTION		
		Helps	Instructs	Prohibits
	Teacher			
	Asst. Teacher			
	Parent			
	Other Adult			
	Other Child			

A manual presenting the definitions of the variables and the behavioral criteria for making ratings on the two observation forms is in preparation.

Preliminary Results. The observational instrument has been used in recording data on each of the seven children during three time samples of fifteen minutes each in both directed and unstructured learning experiences. These being the first systematic observations using the present form of the instrument, they constitute the "initial status" observation data on the children. Observations at the conclusion of the project period will permit comparisons in ratings over time.

For all initial status ratings two observers made simultaneous independent judgments in order to determine the reliability of the instrument. A comparison of the two observers' ratings indicated that a high degree of agreement was attained. There was above 85 per cent agreement between observers on all variables except "Degree of Self-Direction" where for Unstructured Learning Experiences there was 83 per cent agreement and for Directed Learning Experiences there was 74 per cent agreement.

Comparisons are currently being made between the ratings for Directed and Unstructured Learning Experiences for each child. To date four variables have been examined, and the results are presented below:

1. On the variable of "Degree of Involvement" five of the seven children were rated lower in involvement during Directed Learning Experiences than they were during Unstructured Experiences. Most children were rated between "Low" and "Medium" for both types of experience, but there was some variability among the levels at which the children were rated.

2. The level of "Self-Direction" was higher during unstructured than during directed experiences for all children except one, where there was no difference in level. Again, the children were generally within the "Low" to "Medium" range on Self-Direction, there being some variability among the children within this range.

3. All children were rated as having a higher level of cognitive functioning during directed experiences than during unstructured situations. This category received ratings at very low levels, approaching the "Exploratory" level for some children during Directed Learning Experiences.

4. The activity level of the children was approximately the same for the two types of learning experiences, ranging between "Low" and "Medium", with some variability among children.

In conclusion, although there is no presumption of generalizability of these findings based upon such a small sample both of children and of observational time units, the results are encouraging in that:

1. they indicate that small differences in level of functioning between Directed and Unstructured Learning Experiences can be detected;
2. there is variability among the level of ratings across the group of children on a number of variables, indicating that the instrument can detect individual differences; and
3. the ratings are generally in the "Low" to "Medium" range, indicating that the instrument provides sufficient ceiling to permit detection of improvement in the children.

The unique grid-like format of the Observational Record Forms permit the observer to easily record ratings on as many as thirteen variables every minute, permitting subtle distinctions to be made, such as differential ratings on the variables of "Type of Experience Planned for the Child" and "Type of Experience Child is Having."

The prognosis is that this instrument will be sufficiently sensitive to detect small increments in growth over a period of

time. Additionally, the high reliability of ratings between the two observers indicates that the instrument, when used by trained observers who are well versed in the definitions of the variables being rated, can yield useful objective information of the functioning of multiple-sensory-impaired preschool children.

A DEVELOPMENTAL APPROACH TO THE ASSESSMENT AND EDUCATION OF DEAF-BLIND POST-RUBELLA SYNDROME CHILDREN

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To an extent, this paper is a report of the progress at the Diagnostic School for Neurologically Handicapped Children, Southern California, of our study of post-rubella syndrome deaf-blind children. In addition, it is a reflection of my thinking about assessment and learning.

During this past year we have evaluated 50 deaf-blind children. Forty-one were found to have a known history of rubella and the remaining nine had various other etiologies.

Very early, our diagnostic team felt that a traditional clinical approach would not be adequate for assessment, that the only logical approach could be a developmental one. And, in addition, from our previous work in learning disabilities, a language-learning model would give us the proper focus.

We thus made two assumptions. First, behavior grows. It has pattern and shape, as does physical growth; and, the more we know about normal changes that ordinarily occur, the more we can understand the unique growth patterns of deaf-blind children. Second, the key to understanding human behavior is via the development of a child's language-learning system. Language process is the core of a human's learning system. David Krech (1969) has expressed this position most succinctly: "...not every experience or variation in stimulation contributes equally to the development of the brain.... The most effective way to develop the brain is through species-specific enrichment experiences. I would suggest that for each species there exists a set of species-specific experiences which are maximally enriching and which are maximally effective in developing _____ brain. In my opinion, ^{above anything} ~~it is the~~ study of language, developing its brain. In my opinion, ^{linguist} ~~it is the~~ study of language, educate man.... Man's brain, and man's brain alone, is a language-supporting brain."

In our assessment of deaf-blind children, we are using the developmental approach of Jean Piaget. His is perhaps the most comprehensive and practical. He defines development as rooted in the past and as displaying a continuity with the past. Behavior patterns are interrelated, and new behaviors do not develop in isolation. All behavior forms a coherent pattern so that the totality of life is adapted to it's environment. Piaget attempts to identify behavioral structures at each age level and to one

another, and he demonstrates how the child's behavior in return modifies environmental demands (Baldwin, 1968; Flavell, 1963).

Piaget's period of sensory-motor intelligence is of particular importance as most of the post-rubella syndrome deaf-blind children evaluated at the Diagnostic School for Neurologically Handicapped Children, Southern California, were found to be functioning developmentally within the infancy period (below MA 2-0). Coreman and Escalona (1969) have empirically studied Piaget's stage of sensory-motor development. They have validated the usefulness of the Piagetian model in the evaluation of children. They have found that their scale based upon Piaget's concepts differentiates between two aspects of development: (1) The progression from one stage to the next and (2) the behaviors that define each stage. The rate at which a child progresses from one stage to the next depends upon the availability of environmental stimulation. Within the Language-Learning System model, this is referred to as inner language (Swartz and Tracy, 1970). Coreman and Escalona (1969) determined that the rate at which a child progresses from one stage to the next depends upon the availability of environmental stimulation. The environmentally deprived infant moves from one developmental stage to the next but at a slower rate; and is able to apply appropriate developmental schema, but with fewer and less complex problems.

Piaget has not per se, discussed Language-Learning System. He does make the distinction between sensory-motor behavior and later symbolic process which is consistent with our definition of Language-Learning System (Swartz and Tracy, 1970). From our point of view, language, at all levels of development, not only repeats sensorimotor developmental history but eventually replaces it. Thus, we discuss cognition and behavior developmentally from a Language-Learning System point of view. We look at affectivity as language-learned behavior and see a definite connection between affective development and further cognitive development.

Normal Infant Development

The period of sensorimotor intelligences ranges developmentally from the undifferentiated world of reflexes to a relatively coherent organization based upon perceptual and motor adjustments and beginning symbolic manipulation (Flavell, 1963). This final level may also be referred to as representational areas within Language-Learning System (Swartz and Tracy, 1970). The sensorimotor period is divided into six distinct stages. I will briefly attempt to discuss Piaget's criteria at each stage and, in addition, relate concomitant language and affective equivalents.

STAGE 1: THE USE OF REFLEXES (0 TO 1 MONTH). Infant behavior at this stage is characterized by uncoordinated reflective activities, sucking, swallowing, and gross body movements. It is characterized by an absence of genuine intelligent behavior

(Flavell, 1963; Piaget, 1948). At birth, the normal infant has the ability to respond to sound and to vocalize reflexively; however, there is no integration between these behaviors which initiate central language development. The baby is not aware that sounds he hears are his own vocalizations (Reynell, 1969). Affectively, the infant may possibly assimilate crying to his own crying. Hearing someone else may accentuate his crying if he is crying at the time (Flavell, 1963; Piaget, 1948). The baby should quiet when picked up and upon hearing an adult (usually mother's) voice (Decarie, 1965; Griffiths, 1954).

STAGE 2: THE FIRST ACQUIRED ADAPTATIONS AND THE PRIMARY CIRCULAR REACTIONS (1 TO 4 MONTHS). The second stage begins when the neonatal reflexes begin to change as a function of experience. They are the first simple habits, but yet lack the intentional and environment-oriented character of later actions. Behavior is primarily centered on and around the infant's own body rather than outward towards the manipulation of the environment. There is some rudimentary coordination between sight and hearing and between hearing and self-vocalization. Vocalization and hearing emerge such that a baby will interrupt his own activity, search with his eyes in response to certain sounds, and gradually be able to indicate pleasure and displeasure to the stimulus (Flavell, 1969; Piaget, 1948). The infant at this stage should recognize certain sounds and smile when he hears mother's voice. This beginning ability to differentiate sounds is the precursor of the capacity to attach meaning to sounds (Reynell, 1969). According to Myklebust (1954), this type of behavior is referred to as projective use of hearing. Likewise, by the end of the second month, the infant should be able to visually recognize his mother; and by the third month, capable of a definite social response, e.g., smile, to a friendly person. He should be able to follow a moving person with his eyes (Decarie, 1965; Griffiths, 1954). Through stage two, play is primarily for the pleasure of doing so. Imitative behavior at this stage only occurs if the model first imitates the child; he cannot imitate anything that is new to him (Flavell, 1963; Piaget, 1948).

STAGE 3: THE SECONDARY CIRCULAR REACTIONS AND PROCEDURES FOR MAKING INTERESTING SIGHTS LAST (4 TO 8 MONTHS). This stage is a transitional one in the development of intentional behavior. It is... "concerned with the consolidation by repetition of certain motor habits leading to effects in the surrounding milieu which are of interest to the child. The child evolves more interest in environmental consequences of his acts and attempts to imitate, through repetition, an interesting change in the milieu advantageously produced by his own actions. He is interested in sights and sounds which his actions illicit in the objects (Flavell, 1963)." Behaviorally, intention is not present originally. Sensory events become a goal only after a means has been put into effect at this stage. The baby can frequently make deliberate and

systematic imitations of sound, movement, etc., which are behaviors already in his repertoire and which are visually and auditorally perceptible to him (Flavell, 1963; Piaget, 1948). There should be some integration between hearing and vocalizations. The infant is capable of practicing sounds. He is stimulated to babble by hearing his own babbling and by other persons talking to him. There is yet no meaning attached to sounds (Reynell, 1969). Affectively, the infant should demonstrate some beginning capacity to wait and some negative emotion upon the loss of an inanimate and human object. Specifically, he should be able to stop crying by mother's approach and should resist an adult who playfully tries to take something away, i.e., toy, of interest. The child should enjoy being played with (Decarie, 1965; Griffiths, 1954).

STAGE 4: THE COORDINATION OF SECONDARY SCHEMAS AND THEIR APPLICATION TO NEW SITUATIONS (8 TO 12 MONTHS). Stage 4 is characterized by truly intentional behavior. Here, secondary circular reactions developed in the previous stage begin to coordinate with each other to form new behaviors. One schema may be the goal; the other, the means. Developmentally, this is the first time that a specific relationship between objects is established as opposed to the undifferentiated connections between objects in the previous stage. Specifically, an infant at this stage can surmount obstacles to achieve a visible goal or utilize an object to obtain a goal. It can be said that a "wish" for a goal exists. During this stage, play is concerned with the means itself. It is the first stage at which an infant begins to imitate a new model. He can imitate actions of others which correspond to his own actions but which he cannot see or hear (Flavell, 1963; Piaget, 1948). Additionally at this stage, an infant can selectively recognize a familiar word or phrase. At first, it is not true verbal comprehension, but an association of a specific pattern of oral expressive language sounds with a particular affective situation (Reynell, 1969). Audition becomes the primary coordinating sensory modality. Sensory integration is complete and early concept formation begins; that is, from this point the emergence of central language process is measurable (Swartz and Tracy, 1970). Developmentally, there should be definite signs of affect. Specifically, around nine months the child should demonstrate definite displeasure if a toy is taken from him, i.e., make a fuss; and by eleven months show definite affection, returning it rather than just taking (Decarie, 1965; Griffiths, 1954).

STAGE 5: THE TERTIARY CIRCULAR REACTIONS AND THE DISCOVERY OF NEW MEANS BY ACTIVE EXPERIMENTATION. In this stage, the infant can coordinate and repeat existing sensorimotor experience in his repertoire and vary his behavior to see the effect. "The essence of the tertiary circular reactions is the pursuit of the novel, those features of an object that are not, or at least not quite, assimilable to the visual schema (Flavell, 1963)." In other words, in stage 4, the infant could only evoke means-end

behavior as manifestations of his repertoire. At stage 5, the child can solve problems which demand new and unfamiliar means through actual trial and error behavior (Flavell, 1963; Piaget, 1948). An object concept becomes internalized (Reynell, 1969). The child can distinguish substitute signs of communication (Decarie, 1965; Griffiths, 1954). He can now associate means with objects and use a word meaningfully. Thus, objects become transferable into symbols which are suitable for communication (Reynell, 1969). Imitations at this stage are prominent, deliberate, and accommodative. Play rituals are established and newly learned behaviors are actively incorporated in play (Flavell, 1963; Piaget, 1948). The child should be able to discriminate a positive from a negative affective response or advance, comply with some requests and prohibitions, and obey single requests (Decarie, 1965; Griffiths, 1954).

STAGE 6: INVENTION OF NEW MEANS THROUGH MENTAL COMBINATIONS (18 TO 24 MONTHS). Stage six, the last stage in the sensorimotor period, is characterized by the invention of new means through internal mental representation (true central language process behavior). The child can represent events not present in his perceptual field by symbolic imagery. He can systematically imitate actions of objects as well as persons and can imitate through concept attachment (central language) when the model is no longer present. He is capable of pretense and make-believe (Flavell, 1963; Piaget, 1948).

Processes Necessary for Language Development

Specific conditions are necessary for normal language-learning process development. First, there must be adequate opportunity for experiences. Second, there must be intact sensory pathways through which experiences reach the child (Reynell, 1969). For purposes of language, hearing to audition is the primary but not the sole pathway, as language process can develop intermodally, i.e., sight-vision to audition, tactile-kinesthetic to audition (Swartz and Tracy, 1970). Third, the child must have the capacity to appreciate meaningful patterns within the sensory stimulus, spatially and/or temporally. Failure at this level may be considered a perceptual disorder (Reynell, 1967), which, for language-learning purposes, is discussed as auditory dysfunction (Swartz and Tracy, 1970). Fourth, meaningful patterns must be incorporated with existing ones, which further modify and enhance the existing patterns (Reynell, 1969). This is central language, the marriage of symbol with representative experience (Swartz and Tracy, 1970).

Specific Developmental Deviations in Post-Rubella Syndrome Deaf-Blind Youngsters

It is our experience that many of the rubella children have some degree of residual hearing but demonstrate a global failure

to attach meaning to sound. In many instances, these children show a failure in the ability to locate sound sources. We refer to this as a failure to use hearing projectively (Myklebust, 1954; Swartz and Tracy, 1970). Gordon (1966) refers to this as central deafness and classifies it as an auditory agnosia. These children with central deafness fail to respond to sound and behave as peripherally deaf children. The conclusion is that auditory impulses may never reach the cortex to be integrated at that level. "Children who have a more profound disability than one confined to language may in infancy respond to the orientating reflex, but later this reflex may become extinguished. This is likely to occur if auditory stimuli remain meaningless and unreinforced.... Learning processes associated with auditory stimuli will become disorganized and the child will begin to ignore this sense modality and the orientating reflex will disappear (Gordon, 1966)." At higher levels of language-learning, many children may receive and respond to auditory stimuli but are unable to attach meaning to language symbols. At this level, the data which the child learns by repetition (e.g., he is conditioned to verbalize single words) may extinguish because these data do not become associated with meaning (Gordon, 1966).

Chess (1969) has noted that a number of the rubella children behaviorally can be described as autistic or as having autistic features. Descriptively, I would agree with this but would explain the stereotypic, self-stimulative motor behavior and lack of affective development on the basis of, initially, sensory deprivation with sequelae of language-learning disorder rather than psychiatric bases. Myklebust (1956) suggests that the basic emotional problem with deaf-blind children "is severe isolation that seriously impedes the fundamental psychological process such as identification, internalization, ego development, and general emotional contact with others." With hearing and sight impaired, the child is forced into an egocentric, subjective world. In many instances, I would suspect, not a singular peripheral involvement, but a central or perhaps cortical disorder as well; the deaf-blind child, therefore, presents us with a severe and global perceptual dysfunction.

Thurrell and Rice (1970), in a study of eye rubbing in blind children, hypothesize that stereotypic behaviors are persistent exaggerations of basic behaviors that occur normally and transitionally in the course of development of normal infants. These behaviors emerge in the sensorially deprived youngster "as attempts at self-stimulation that substitute for more usual sensory input and associated social stimulation at early stages of development." They are a consequence to the breakdown or absence of sensory-social input patterns. These behaviors assume a great deal of autonomy and contribute to difficulty in extinguishing, and difficulty in moving from one developmental level to the next.

Consistent with Rutter's (1968) explanation of social withdrawal in autism, I feel that social withdrawal or abnormalities in social feedback, i.e., lack of anticipatory posturing in infancy, arise in relationship to defects in language process. In other words, distorted perception (not deafness and/or blindness) is due to the failure to understand and may be more damaging than a failure to hear at all. Likely, the more severe the perceptual deficit, the more severe the social withdrawal. The combination of peripheral and central disorders have a greater effect than deafness or blindness alone. In contrast, the deaf child does not have difficulty with comprehension. He can acquire symbolic communication intermodally, i.e., via the relationship of other sensory modalities - e.g., sight vision to audition.

Thus, in many rubella children, development is arrested at some specific stage in the sensorimotor period because of the failure or lag in development of either inner and/or central language as manifest in their behaviors. Additionally, and following, any apparent emotional disorder is seen as secondary to a language-learning disorder and other perceptual abnormalities.

Implications for Education

The implications of the foregoing research for educational programming of post-rubella syndrome children lies in the recognition of process orientation in developing a curriculum. Such a position was stated by Ashurst (1969). He urged that:

...we develop teaching-learning strategies based upon the use of behavioral objectives using a task-oriented approach and which is based on a sequential-developmental curriculum. It must be a curriculum in which the learning tasks are organized at an operational level and from which the teacher can objectively measure the outcome.

It must be ordered in a hierarchy vertically and horizontally so that, if necessary, the teacher can move down to the most basic physiological response mechanism in which the child has effectively operated and which can be employed to effect a change in his learning behavior. It must say, in effect, HOW are you going to teach WHAT you say you are going to teach.

Thus, "...if one can diagnose at which stage the child is functioning, it will be possible to provide...the type of stimulation that the child can utilize at the level of cognitive development he has attained.... Educational activities can be planned in terms of specific and sequentially ordered exposure to materials and action contexts that are stage appropriate (Corman and Escalona, 1969)."

The direction for teachers is specific. Above all other school personnel, teachers are the ones most involved with the education and training of children. They are, in fact, the "general practitioners" of learning. Those working with post-rubella syndrome deaf-blind children must themselves become experts in early child development. Only by doing this can they understand the behavior of these children and create and implement appropriate learning interventions.

SELECTED BIBLIOGRAPHY

- Ashurst, Donald I., (1969). "An Interdisciplinary Team Approach to Psycho-Educational-Medical Evaluation of 'Deaf-Blind' Children." Procedures of the Special Study Institute: Effects of Preschool Service for Deaf-Blind Children. Department of Special Education, San Francisco State College.
- Baldwin, Alfred L. (1967). Theories of Child Development, New York, John Wiley & Sons, Inc.
- Chess, Stella (1969). Behavioral Study of Children with Congenital Rubella, New York, New York University Medical Center.
- Corman, Harvey H. and Sibylle K. Escalona (1969). Stages of Sensorimotor Development: A Replication Study. Merrill-Palmer Quarterly 15, pp. 351-361.
- Decarie, Therese Gowin (1965). Intelligence and Affectivity in Early Childhood, New York, International Universities Press, Inc.
- Flavell, John H. (1963). The Developmental Psychology of Jean Piaget, New York, D. Van Nostrand Company, Inc.
- Gordon, Neil (1966). "The Child Who Does Not Talk" British Journal of Disorders of Communication, 1, pp. 78-84.
- Griffiths, R. (1954). The Abilities of Babies, London, University of London Press.
- Krech, David (1969). "Psychoneurobiochemeduction" California Monthly, 79, pp. 14-20.
- Myklebust, Helmer R. (1954). Auditory Disorders in Children, New York, Greene and Stratton.
- Myklebust, Helmer R. (1956). The Deaf-Blind Child, Watertown, Mass., Perkins School for the Blind.
- Piaget, Jean (1948). The Origins of Intelligence in Children, New York, International Universities Press, 1952.

Reynell, Joan D. (1969). "A Developmental Approach to Language Disorders", British Journal of Disorders of Communication, 4, pp. 33-40.

Rutter, Michael (1968). "Concepts of Autism: A Review of Research", J. Child Psychology and Psychiatry, 9, pp. 1-25.

Swartz, George A. and Tracy, Nathan L. (1970). Language-Learning System and Learning Disability, New York, Simon and Schuster, Inc. (In Press).

Thurrell, Richard J. and Rice, David G. (1970). "Eye Rubbing in Blind Children: Application of a Sensory Deprivation Model." Exceptional Children, 36, pp. 325-330.

TESTING DEAF-BLIND CHILDREN

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Currently there are no specific intelligence tests on the market for deaf-blind children. We are attempting to develop instruments for them. In the meantime we find it necessary to adjust our instruments that are primarily for the blind and those that are made primarily for the deaf, to allow for the multiple sensory deficits.

There is growing evidence that the developmental scales published for normal or blind children such as the Maxfield Buchholz Test for Preschool Blind Children, the Vineland Social Maturity Scale, Doll Preschool Attainment Record, the Denver Developmental Screening Test and others, are less applicable to deaf-blind children as we learn more about them.

Children do not develop evenly step by step but rather in spurts. A child might have a social age score of 52 with an intelligence quotient of 27. The majority of deaf-blind children that we have seen this past year are retarded according to all standardized scales, that is, retarded in motor age, social growth, and intellectually. This appears to be a normal pattern for deaf-blind children and it is understandable when one reviews the medical history, the hospitalizations involved and the multiple sensory impairments.

We use standardized tests to enable us to get a baseline from which to develop new instruments and to help us understand the child's progress as compared to so-called normal children. As we compare these children with other children their age, we are continually aware that there is less difference between a 12- and a 13-year-old child than there is a 6- and a 7-year old child. This is even more striking when a 2-year-old is compared to a 3-year-old child. Perhaps psychologists are "hung up" with terms such as severely retarded - indicating little evidence of ability to learn, moderately retarded - showing evidence of ability to learn, and dull-normal intellectual level and average intellectual level. However, these are terms that the general population has learned to live with and which have some meaning for educators, for whom we prepare our reports. We could use terms such as motor age, adaptive age, language age or personal social age, and these are frequently used by psychologists in their reports. We have found that most of the skills of deaf-blind children are 3 to 4 years retarded but this is not true in all cases and the onset of the rubella in the mother does not appear to account for the insult to the sensory deficits.

We have been using a form ball obtained from the Tupperware Company which is bright in color and has proved successful with more than half of the children we have seen as one way to determine awareness of form and shape. The Seguin formboard from the Arthur Performance Scale has also been used for this purpose. However, the board is large and the children are usually small physically and find it difficult to reach across to obtain the forms; so it is necessary to either modify the size of the board or to modify the method of administering the tests. In the beginning, no attempt was made to time these children, but increasingly we have found that time can be measured and norms can be established for this task. Many of the children are able to complete, successfully, the Mare and Foal puzzle, also from the Arthur Performance Scale.

Tactile exploration is investigated with the use of tactile materials obtained from the Lakeshore Equipment Company. They also have forms which we have used for measuring size and thickness and, interestingly enough, we have found that deaf-blind children tend to use more of their visual acuities than they do their auditory abilities and only when the vision is extremely limited do they attempt to use their tactile skills. Tactile skills are one of the areas which seem to be foreign to the child's preacademic training. Even self-help skills may be highly developed without any development of the tactile skills. Yet it is the feeling of this psychologist that the uncertainty of stabilized vision, that is, vision that will remain with this child the rest of his life, makes it imperative that tactile training be reinforced continually throughout the primary years. We have attempted to use the Ohwaki-Kohs Tactile Block Designs Intelligence Test for the Blind. However, we have found that our children are not able to distinguish the textures, which frequently have minute raised dots, and the difference in the textures is not great enough. However, we have made similar blocks using patent, chenille, corduroy and velvet. These blocks, when placed together, make a design similar to the Kohs blocks and are useable with some deaf-blind children.

I have used the Brite-Lite. This is a commercial toy, used in a darkened room. You plug it in and then instruct the children to attempt to match a pattern. Some of the deaf-blind children will play for as long as 20 minutes with this game, on their own, choosing pegs at random.

We have frequently found that the Arthur Adaptation of the Leiter International Performance Scale, in spite of the fact that the figures are very small, has been very useable in a small percentage of the cases seen. We use the beginning tray, for we have not yet had anyone who has been able to go beyond Tray I successfully. The beginning of Tray I requires matching of colors with direction, and although some students are able to match colors with other media, they are unable to exhibit any transfer of the learning to this particular task.

Minor portions of the Stanford-Binet Form L-M have been used as well as the Cattell Infant Intelligence Scale, which desperately needs to be revised for use with deaf-blind children. We have also used a transistor radio and have found that children who have not responded to other audiological testing have responded to the transistor radio. Standing behind the child and placing the radio on first one side of the head and then on the other we find has helped us to ascertain which ear the child appears to be receiving the most stimulus from. Changing the pitch from a newscaster to music has given us further clues. Most deaf-blind children enjoy the transistor radio and like to hold it to their ear. A few will have nothing to do with it, but the majority of these children appear to be stimulated by it. Many of them will vocalize with the transistor; facial expressions are frequently observed as clues that some reception is being received by the child.

Knowing that we will probably never have enough teachers for the number of deaf-blind children to the ratio to which we feel these children need instruction, we have attempted, at our facility, to educate our attendant staff to our needs, as well as the needs of the deaf-blind children. This is done with an indoctrination program, followed by having the attendant present whenever the child is having any psychological testing and also by an observation form, which each attendant (on every shift) fills out on each child. The format used is not yet refined at present, but a copy of what is currently being used is presented on the following page.

We have found that parents are resistive to answering numerous questions about their children to each professional person that is seeing their child. As a result, an attempt was made to make a form which a parent could fill out and which hopefully could be duplicated for each of the members of the diagnostic team. This is still in the experimental stage and needs revision. This form is presented here for your information and as a temporary instrument only.

The format of the psychological evaluation report appears to be of interest to teachers. We state first the reason for referring the child, stating who has referred the child and for what purpose. Next we give a very brief history which we feel is pertinent to the testing data. This history includes mention of the onset of rubella, difficulties at birth, the beginning of speech, of walking and the self help skills acquired. We also give a brief statement of the vision and hearing present in the child and a notation of current medication and recent surgical procedures. The educational opportunities the child has been exposed to and the status of the child's mobility are mentioned. We then list any previous testing of the child. Following that, we list the methods of study that we are using, such as the Cattell Infant Intelligence Scale, Tactile Manipulative Materials, Stanford-Binet Form Board, etc. The appearance and behavior of the child are also mentioned. I'd like to quote from a study we did on a 10 year old child:

CHILD'S NAME _____ DATE _____ REPORTER _____

Eating:

Yes No Sometime Comments

1.	uses fingers only				
2.	uses spoon with spilling				
3.	uses spoon with little spilling				
4.	uses fork with aid (fingers)				
5.	uses fork without aids				
6.	uses knife for spreading				
7.	uses knife for cutting				
8.	uses fingers as pusher				
9.	uses bread as pusher				
10.	fingers all foods even though using utensils				
11.	drinks from cup with spilling				
12.	drinks from cup without spilling				
13.	uses straw				
14.	drinks from water fountain				
15.	uses napkin				
16.	eats with minimum of spilling				
17.	eats only soft foods				
18.	will eat semi-solid food				
19.	chews food				
20.	chews food and swallows				
21.	chews food with mouth closed				
22.	food preferences				

Toileting:

1.	is toilet trained				
2.	cares for self at toilet				
3.	uses toilet paper				
4.	flushes toilet				
5.	washes hands after lavatory				
6.	readjusts clothing before leaving bathroom				
7.	(boys) uses urinal				
	directs flow				
8.	(girls) recognizes need for napkins				
	puts on napkin				
	disposes of soiled napkins properly				

Grooming:

1.	washes hands				
2.	dries hands				
3.	uses soap				
4.	can direct flow of water correctly				
	(according to temp.)				
5.	washes face				
6.	washes hair				
7.	rinses hair				
8.	uses washcloth				
9.	brushes teeth - manually				
10.	puts toothpaste on brush				
11.	combs hair				
12.	brushes hair				
13.	bathes with help				
14.	bathes alone				
15.	can prepare bath water alone				
16.	prefers shower to tub				
17.	undresses alone				
18.	undresses with help				
19.	dresses alone				
20.	dresses with help				

"This is a pleasant blonde girl who wears glasses and a hearing aid. She seldom made any vocalizations except when she was frustrated. She has a short attention span and some blindism mannerisms. She holds objects close to the left eye so frequently that the left lens is badly scratched. She sleeps low in her bed in a knee-chest position or in a ball. She is a small child who has 'travel vision.' She does not respond to any auditory stimulus nor does she attempt lipreading. She will momentarily attempt Tadoma Motor Kinesthetic methods but this is only an emerging facet. She can make her wants understood and has a real facility for selecting 'coke' from a machine containing a variety. She shows some rigidity of behavior and demonstrates an ability to use her memory in spite of her scores in testing."

The report is written in a manner that I hope will be of some help to teachers and aides. This looks as follows:

SELF CARE

Abilities:

1. Can dress herself if clothes are laid out or handed to her correctly. Cooperates well. Can also undress herself if shoes are untied.
2. Can button in front.
3. Can zip and unzip.
4. Can put on socks and shoes.
 - a. Shoes have rubbed abrasions on heels. She is more comfortable in house-slippers.
5. Is toilet trained - can make wants known and can wipe herself.
6. Good chewing ability for candy - does not drool.
7. Uses spoon poorly but uses fork well.
8. Has good travel vision and avoids hazards.

Needs:

1. Develop knowledge of front and back - use tabs and tactile skill.
 - a. Necessary to tell front of pants, slips, etc.
2. Teach to button on side.
3. Teach to use hook and eyes.
4. Teach to lace, tie and untie.
5. Teach to flush toilet.
6. Increase desire for chewing foods.
7. Increase hand control of a spoon with liquids.
8. Teach to open doors. (waits to be waited on)

SELF CARE (continued)

- | | |
|---|--|
| 9. Can drink from a cup or glass unassisted. | 9. Teach how to unwrap candy. |
| 10. Dries fingers only, holds hand under water and then holds the soap. | 10. Teach to dry entire hand. Coordinate present skills to enable handwashing to be done acceptably. |
| 11. Mother says can use electric toothbrush. | 11. Teach skills without electric implement. |
| | 12. Teach to comb and brush doll's hair, then her own. |
| | 13. Teach to hang up clothes. |
| | 14. Teach to use knife for spreading - later for cutting. |

DEVELOPMENTAL SKILLS

Abilities:

1. Can match by basic color (not shadings).
2. Can match by texture.
3. Can cover square and round boxes.
4. Can dress doll.
5. Can snip with scissors.
6. Can turn egg beater with right hand.
7. Can string beads.
8. Can use a peg board.

Needs:

1. Teach to match by size. Teach tactile kinesthetic skills.
2. Match by simple pictures. Suggest using cans with labels.
3. Kinesthetic body awareness needs to be taught.
4. Teach to undress.
5. Increase the skill.
6. Increase the skill with the left hand.
7. Teach to string to match pattern.
8. To use pegs to match a pattern.

DEVELOPMENTAL SKILLS (continued)

- | | |
|---|--|
| 9. Can build an 8 block tower and put blocks in a cup. | 9. Teach to build a bridge or to place blocks in a box. |
| 10. Can do Binet Form Board in any position. | 10. Develop Form Board skills to those with more than 3 pieces - gradually, such as Seguin Form Board. |
| 11. Can see and retrieve objects 2 inches in diameter which are 30 inches away. | 11. Increase use of vision. |
| 12. Loves dolls - cold objects - the color red - shiny objects. | 12. Learn to follow commands - feed doll - put doll to bed, etc. |
| 13. Can put pellet in bottle and put small buttons in a box. | 13. Teach how to sort by black and white accurately. |
| 14. Can use chalk and board in imitation. | 14. Develop emerging skill with paper and pencil.

a. Enrich with clay of various consistencies, finger paints, and crayons. |
| 15. Uses vibrations minimally - example: music box. | 15. Explore use of sound - vibrations - rhythms. |
| 16. Uses some signing. | 16. Increase and develop sign language for communication. |
| 17. Smells, tastes and uses left eye with object very close to explore. Occasionally feels - touches. | 17. Help to overcome blindness traits: shaking objects in front of eyes, shaking hands, staring out window into light. |
| 18. Perseverates - short attention span. | 18. Introduce to more skills as mentioned before with recognition of problem (18) with assist. |

A summary is then given of data and observations discussed in the report.

Under self care (needs: 1) we encourage parents to sew tabs on the back of clothes so the child can begin to tell the front and back of T-shirts, pants, and underwear. A running stitch with embroidery thread works just as well - an "x" or other symbol. (needs: 6) Finger feeding is especially important to deaf-blind children. By having direct contact with the food, the child gains a familiarity with the feeding situation he can't achieve otherwise. This is an important step toward use of the spoon. A weighted spoon (even using clay) may help this child increase her hand controls. (needs: 8) Work with clay making it fairly runny at first and gradually making it drier - rolling strips of clay - molding it, and gross finger painting using the arm and sides of the hand will also help increase muscle tone so that hand skills can be controlled easier. (needs: 9) Unwrapping candy requires small muscle control and stimulus-reward techniques usually work well.

Suggestions for use of teacher are usually given in the staffing and are only to initiate ideas for those working with the child.

Language development is the area most retarded in deaf-blind usually. It is my feeling that part of this is a cultural lag seen in our generation. Parents of normal children are not talking to their children today. If it were not for TV, many of our children would not receive any language stimulation. Mothers do not sing, talk, play, or read to their children with any consistency. It is the rare parent today who talks to his infant. Thus we can understand that parents of deaf-blind children are further handicapped, for the cooing-laughter and eye movements which are cues and stimulate parents of normal children are very limited in these handicapped children. Parents find it a real "chore" to talk continually and receive no apparent response - so the activity is quickly stopped and many children are handled like inanimate objects - kindly but without the nonsense sounds-kissing-caressing given to children who show some response.

Some parents feel so sorry and/or guilty about their handicapped child that they may want to avoid for him any situation in which he must make an effort for himself. They will do everything for him because they feel he is their full responsibility. This removes incentive from the child and retards his development.

Teachers' observations of behavior and learning for each child will help psychologists develop meaningful instruments to better measure these children and their potential.

PARENT QUESTIONNAIRE FOR
EVALUATING CHILDREN

Date _____ Child's Name _____

Dear Parents: Welcome to the Northern California Diagnostic Center. We are anxious to understand as much as we can about the regular pattern of your child's life. Hopefully, the form will save you answering the same questions many times.

How much do you think your child sees? Give examples. _____

Best eye: Right _____ Left _____

How much do you think your child hears? Give examples. _____

Best ear: Right _____ Left _____

What is the usual name you use for your child? _____

Can your child's speech be understood? _____

Can your child walk alone? _____

Does he need assistance? _____

Medication your child is currently using:

Medicine: _____ Time taken: _____

Medicine: _____ Time taken: _____

How is medicine given? _____

Please circle the appropriate answers:

1. Is your child toilet trained? Day: Yes No Night: Yes No
2. Will he let you know or must you "catch" him?
lets you know must be "caught"
3. Child wear diapers: day night never
4. Child wears plastic pants: day night never
5. Child is taken up: 0 1 2 3 or more times a night
6. Child usually washes hands: yes no
7. Child usually washes face: yes no
8. Child usually takes own bath: yes no
9. Child usually dresses self: yes no
10. Child usually undresses self: yes no
11. Child can button: yes no
- Child can zip: yes no
- Child can fasten grippers: yes no
- Child can tie: yes no

PARENT QUESTIONNAIRE (continued)

12. Child usually brushes teeth: yes no
13. If child wears hearing aid
 can he insert hearing aid
 alone? yes no not applicable
14. Can child put on harness
 for hearing aid alone? yes no not applicable
15. Child naps: daily occasionally seldom never
 Usual time for nap: _____ Length of time: _____
 Usual bedtime: _____ Usual rising time: _____
16. Favorite foods: _____
17. Foods child dislikes: _____
18. Does child chew and swallow? _____
19. Does child use a bottle? yes no If yes, when: _____
20. Does child hold a cup? yes no
- Does child hold a glass? yes no
21. Does child use a spoon? yes no some
- Does child use a fork? yes no some
- Does child use a knife? yes no some
22. Favorite toys: _____
23. Toys child dislikes: _____
24. How does child make wants known? _____
25. Does child have temper tantrums? often seldom never
 Does anything special bring this on? _____
26. Special instructions you wish to leave that we may continue the
 tender loving care you give your child: _____

27. Methods you use to reward your child for good behavior: _____

28. How do you communicate with your child?
 Ordinary speech _____
 He knows these few words by sound _____

 He lip-reads _____
 He understands if his hand is placed on the speaker's mouth
 and jaw _____
 I gesture to him _____
29. Will your child imitate others? _____

NORMAL LANGUAGE DEVELOPMENT

Walter Loban
Professor of Education
University of California, Berkeley

It is indeed my hope that you will find, from listening to a picture of the normal language development of children, some hunches, insight, and ideas useful in your work with handicapped children. But even if you cannot find material for transfer or insight, the topic of language and its development is so fascinating that it can be of interest to you for its own sake and you may also be motivated to think about your own power over language and your own development of language.

Unlike height or general physical development, our language development does not stop at age 18 or 23 or wherever physical development stops. Nor does it stop like intellectual development. One can continue to polish and improve his power over language up until the time of senility. When I speak of language, I mean all four modalities. Listening is something that everybody can improve. It is often said that the average human being has an attention span in listening comparable to the mating of the fruit fly. We can also develop in power over the spoken word. When it comes to reading, I am reminded that Goethe said at the age of eighty, "I'm still learning to read." And last of all, wouldn't you all agree with me, if you've recently written a term paper in any university classroom, that we can all improve in writing? Everyone is still learning how to write better. All of us can find interest in language development, and perhaps a description of the normal development of the child can be helpful to you in your work with handicapped children.

Up until recently we've assumed that children learn language solely by imitation; that a stimulus-response psychology has depicted it; that the child hears the words and then is encouraged to say them and then reinforced by the parents. That picture is not complete. The linguists now believe that every human being has within him an innate propensity for language, that speech isn't just a matter of stimulus and response, but that it is there already. The child is, so to speak, wired for language. Fish got to swim, birds got to fly; human beings got to speak, got to babble, got to talk; they are wired to do this sort of thing. That innate propensity fastens itself upon whatever language is around. To give you another analogy, human being's hands and fingers seem intended to pick things up and whatever is around the baby picks up. At first because the movements are gross, he picks up large things and uses the whole body for doing it, but gradually he refines the picking up until some people can do the most intricate things with their fingers such as women doing crewel work.

Apparently, language begins in the same way, with gross, babbling sounds, followed by the refining of the sounds into words.

For the first six months the normal child and the deaf or blind child will babble in the same way. Up until twelve months, Lenneberg,¹ a professor at Harvard, has evidence that deaf children do babble in identical ways with normal children, but it is his contention that after twelve to eighteen months the number of different sounds uttered are not as great for deaf children as for normal children. That babbling during the first six months is a matter of sounds like bam-bam-bam, lam-lam-lam, gam-gam-gam. In other words, the child seems to be creating categories we call phonemes. Phonemes are those smallest bits of sounds put together in a word; fat, for instance, has three phonemes, f--a--t. The child is beginning to make categories of phonemes.

Somewhere after the first six months, the normal child speaks his first intelligible word--somewhere between six and nine months. Then from nine months on the normal child begins to use many naming words and at approximately eighteen months, the child begins to use his first two-word sentence. He says, "Baby up!" or "Papa go." or something like that. At the age of 24 months he begins to do something that is of great interest to him. He begins to find pivot words like "all gone, daddy gone, gone mama, gone ice cream," or "head off, off head, off stairs, off table, table off." He'll begin to use a word like "off" or "gone" or "all," and he'll use it before and after his two-word phrase. In other words, he is beginning to manipulate language.

This manipulation is tremendously human and tremendously valuable in human speech. It is something all of us should be doing. The good writer doesn't always use subject-verb, subject-verb, subject-verb sentences. He feels his sentences and thinks: Is there a more effective way? Could I turn the sentence around, or could I take this little cluster of words and put them at the head of the sentence? Tenth graders, when I was teaching them, used to write sentences like this: My greatest ambition is to be a nurse which I have had from when I was a child. Now, what that writer needed to do was to try different ways of saying that sentence until she found something like: My greatest ambition, ever since childhood, has been nursing.

Now this same manipulation in oral language is also valuable. The most powerful speakers, child or adult, are those who have varied ways of saying things, who have flexibility and resilience with the sentence structure, who can manipulate the sentences, not only in writing but in speaking, and can find the most effective, the most powerful ways to

¹Eric H. Lenneberg, "Speech as a Motor Skill with Special Reference to Nonaphasic Disorders" in Monographs of the Society for Research in Child Development, Serial No. 92, 1964, Volume 29, No. 1, page 120 of the article on pages 115 to 127.

present ideas. The writer or speaker must put himself in the shoes of another person so that as he speaks he is searching constantly for just the right word, the right phrasing, that will most clearly communicate to the other person. He needs to have some comprehension of how the other person receives what he has to say. For instance, if he uses too many overly-elegant words, the other person is turned off because he sounds as if he is trying to be snobbish or superior. If he uses profanity and people are offended by it, communication suffers. The form calls attention to itself rather than the idea. (If you use obscenity or profanity, people may note something immature about you. You are not quite secure, you have to show that you're "tough," or that you know these words.)

Another example of the speaker's need to put himself into the position of the listener is the use of slang. Slang can be colorful but it can also be dead. For instance, some teachers trying to show naturalness with students indulge in slang and, while a few students think, "Isn't that teacher wonderful," most students feel that teacher is weak. "He's trying to be one of us, but after all his hair is white."

It's very interesting to study language because you can easily detect a great deal about a human being. The minute we open our mouths we tell other people all kinds of things about our personalities. People who are supercilious or snobbish betray themselves. People like Uriah Heep, oily and sycophantic, betray themselves. People lacking in self-confidence, those who are timid with a sense of inferiority, they also betray themselves by their language. And the really fine people whom you meet, the ones you most look up to, the ones who have that marvelous maturity that makes their stance toward life so admirable invariably tend to be people who speak easily and naturally, who look you straight in the face and whose concern is not with thinking about their language at the moment, but only of how best to phrase their ideas to help you to understand.

The manipulation, the pivoting period, at about age two is tremendously important in the normal child. From there he begins to move into using patterns of the English language such as the subject, verb, object. (I hit the table. I is the subject, hit is the verb, table is the object. The object received the action of the verb.) Soon he begins to use other patterns of sentences. Mary sat down. That belongs to a very famous pattern, just subject and the verb, a kind of a verb that doesn't do anything to anything. "Jesus wept," said to be the shortest sentence in the Holy Bible, is such a pattern.

Another pattern is one where there is a satellite at the end of the sentence: "We elected Susie president." There is also an inner satellite. The Germans and Latins called it dative. We call it the indirect object: "He gave the car a wash job." Then there are some

rather difficult patterns--like the passive: "My daddy got burned by a hot pipe." There is the interrogative where you use questions, the imperative command, and the negative.

Now the interesting thing about these patterns is that by the time a child arrives in kindergarten at the age of five he has already mastered all the grammatical patterns of the English language. We have about nine or ten, depending upon how you count them. (Most languages only have about nine or ten patterns.) By the time boys or girls, dull, wealthy or impoverished, by the time the children reach school, they know all those patterns. They know the grammar of the English language. They can't tell you about accusative and nominative case; they can't discuss subject and verb; they don't know the inner satellites and the outer satellites, but they can use all of them. They can even use the passive construction in which the whole sentence has been turned around. On my own research I have numerous examples of kindergarteners at the beginning of the year using all these patterns.

Children already use all those patterns, and the linguists are convinced that all of this is a part of something innate in the human species and language is a model of the human brain, of the human mind. One of the things shown by language about the human brain is that the mind categorizes, that it has a propensity to distinguish between things not quite alike and to organize them into categories. This is what that little baby is doing the first six months when he's saying bam-bam-bam, lam-lam-lam, gam-gam-gam. He's beginning to make distinctions; next he is going to categorize those distinctions. But language shows us a model of the human mind. Apparently it is necessary for the survival of the species to take this blooming confusion that assaults our nervous system, all these perceptions impinging upon us through the eyes, through the ears, through the touch (tactile sense), through the taste, whatever way it comes in and to make some kind of order, to impose some kind of form upon the chaos assaulting us. This is how the nervous system has evolved, developed through the centuries, and this is what has enabled man to survive upon the crust of the planet and to outwit the other forms of life, to become the dominant form of life.

Even though they are handicapped, impaired in various ways, the children with whom you work are human also. It is perfectly obvious that within them exists this same propensity to make order of things. They will probably begin with sounds but they're going to run into certain kinds of walls. If they can't achieve order with sound, it may be that order has to be accomplished with the eyes or if they have neither sight nor hearing, they will have to use something else. Of course, the most interesting case, the one the world is familiar with, is that of the little girl who must have dwelt like an animal up until the moment that she was able to disassociate the symbol for

water from any specific water and realized that it could stand for water, that you talk about water even in its absence. This is one of the most powerful and illuminating case studies in the world, not only for your purposes but for those of all normal human beings' purposes.

We know when we look at animals that they do some kind of thinking. Obviously, animals can do things; but when we begin to study their response to language and their language we come across this important distinction between animals and human beings, that animals respond to cues but not to symbols. I want to make clear what my distinction is between these two. A cue may be a green light or a red light or a growl or a threat, but it is something imbedded in the concrete situation; the situation has to be present. A cue isn't anything referring to yesterday or to the future or something not present. Human beings can respond to cues also. We do this with green and red lights. We respond to a snarl. If a man comes at you with a knife, you respond to that. Definitely, we're capable of responding to cues in the immediate situation. Like animals we share this ability.

A symbol, however, is different from a cue. A symbol, for one thing, is arbitrary. It's arbitrary that we call this thing table; the Spanish call it la mesa. We call this a glass. The French say verre. The Spanish for glass is vaso. There are many different symbols for glass in German, Scandinavian, Swahili. They are all perfectly arbitrary, these sounds we assign to objects and concepts. The thing about a symbol is that you and I can talk about a glass even though it isn't here. And tomorrow you could discuss this and say, "Well, the speaker used the word glass as an example of a symbol." You still could talk about it with each other and you would know what was being said.

I can assure you that a great many human beings are convinced that their dogs do use symbols and are capable of understanding everything. Actually there is no known or verified example of any animal ever making the leap from cues to symbols. There is no example either of the jackdaw, the most brilliant or gifted of the birds, or of any of the gifted animals being able to make this distinction, to make the leap from cues to symbols.

And so when we think about Helen Keller we realize that at first she led the life of a very brilliant and gifted animal. Up until the moment the propensity within her to use language and to make distinctions suddenly seized upon the idea, the hunch, the insight, made the leap from cues to symbols. Until that moment Helen Keller could make sense of hand language only if there were water present. To me that is one of the most dramatic stories in human history.

The big hope, of course, is that for those you teach some other modalities can be developed, as they were (tactile modalities in this

case) for this little girl. Human beings can use gestures and signs instead of curious sounds we make down in our throat. We could have used touch with each other but obviously the easiest one is sound, isn't it? This is undoubtedly why the human mind fell into using sound rather than some other form. But the other forms are possible. There are sight forms; you know we can read these curious hentracks that we call print. Isn't it amazing that we can look at them and make sense out of them?

Of course in this case we know that the hentracks on paper we call print are really just a pale facsimile of the spoken language, that the living language as the linguists always remind us is the spoken language. The best readers are always those who know how the sentence would sound if it were to be read aloud, and the poorest readers are always the ones who bark at print when they're asked to read aloud. The living language uses intonation patterns with pitch and pause and stress. The music of the English language or Polish or whatever, the vocal signaling is the living language and print only does it's best to indicate where the voice drops by putting a period, where you lift the voice by putting a question mark, where emphasis belongs by underlining. But even so print does a poor job of reproducing the living, spoken language. So obviously the crucial problem is that if your pupils can't hear the living language, you have a real difficulty in getting them into some other modality. Smell is not going to work because we can't control the perceptions in taste and smell. The only one we have left is tactile perception, I suppose.

My problem this morning, however, is to tell you how the normal child develops; and the normal child does develop by manipulating sounds and then, as I've suggested to you, he begins to use sentence patterns and to manipulate them. We call these patterns syntax. When linguists talk about language they start with phonemes, the little bits like c--a--t. Those little bits of sound we put together to make words are phonemes. The next larger category is termed morpheme. For instance, if you have "walk" and you add "ed" or "ing" you have two morphemes: walk and ed and walk and ing. If you put "s" on a word--pencil, pencils--you then have a morpheme, pencil plus and "s" on it, making it plural. However, morphemes are not very important in the English language. Jean Berko at Harvard² made a study of morpheme inflection. She had funny little creatures that she showed the children and she said, "Now, can you pretend this is something you have never seen before. This is a wug. Here is another wug. Now, boys and girls, we have two ----?" Berko's subjects caught on. They knew that there is one doll and two dolls. And showing children's logic they say, "There's one sheep" and "There's

²Jean Berko, "The Child's Learning of English Morphology," Word, 14 (1958), 150-177.

two sheeps." Also morphologically they say, "I walk, he walked yesterday," so they say, "I go, he goed, he eated." A little girl said to me in kindergarten that she had the measles and they were up at Yosemite and her mother hid her because "she was afraid I might have spreaded it all around." That little girl was being perfectly logical. The child has already learned regularity of language.

On a scale of complexity, we move from phonemes to morphemes and then to the most important thing for your purposes and mine, how the words are put together to make sentences. We call this syntax or pattern. At this level we are concerned with subjects and verbs and with their modification. The wonderful thing is that every child, even the dumbest, comes to school knowing all the syntactical patterns of the English language. He already knows the grammar of the English language even though he can't talk about it.

At this point it is important that you and I mean the same thing when we talk about grammar. Grammar is the technical explanation in terms of case, agreement, and other terminology of how the English language works. One of the most pervasive and erroneous concepts in education is that if you teach children grammar, their usage will improve. This has been one of the curses, not only of American and English education, but of French and Persian and many other educations: the erroneous concept that a knowledge of grammar will improve the beauty, the power, the acceptability with which one speaks. Let me give you an example. The subject of the infinitive, strangely and illogically enough, is not in the nominative, but in the accusative case. Now, how many of you need to know that in order to say, "I want him to be my friend"? How did you learn it? You learned it through usage, not through grammar. You hear through habituation. There is so much grammar taught that clutters up the child's mind, discourages him, makes him or her feel inferior because he can't remember it, gives him poor grades. There are teachers struggling, frustrated, day after day to make pupils remember these abstract grammatical concepts long before the age of eleven when Piaget says they can cope with abstractions.

Grammar is a fascinating subject. I like grammar myself, but I'm not about to impose it upon the human race because the human race can learn to say I want him to be my friend, I want her to be my friend, I want them to be my friends without knowing the grammatical rule. I was up in Sacramento a couple of weeks ago. A woman was teaching the difference between who and whom. She was saying to them, you know, if you don't learn the difference between who and whom, girls, you won't get a good husband. While she was drilling on who and whom, there came into the room a girl with a message from the main office. The teacher looked up and said, "Who's it for, Jenny?" After four years of English at the University of Minnesota, I began teaching; and in those days I taught who and whom. On election day, I went to some

meeting at the University of Minnesota. We were climbing the steps of Folwell Hall, my dear old professor, Joseph Warren Beach, Head of the English Department, and I. Summoning my best English-teacher English as we went up the steps I said to Professor Beach, "For whom are you going to vote?" He stopped abruptly one step above me, looked down, and said, "Gad, man, do you talk that way all the time?" It was an embarrassing moment but one that was good for me. Now I'm secure enough to know that the best language, natural and easy, conforms to informal usage.

The children have learned by the time they come to school the grammatical patterns of the English language without ever having these grammatical explanations given to them. Remember, too, that not all human beings speak standard English in this country; some children will come to school with nonstandard syntactical patterns. That doesn't mean their language is inferior; it's merely different. This is one of the most difficult of lessons for the English purist to learn. A dialect is capable of explaining everything that standard English expresses. Standard English is merely another dialect. It happens to be the prestige dialect; it's the dialect of the establishment. However, I am not disparaging it because there are tremendous advantages to a standard dialect. In this country one can move from Bangor, Maine, to San Diego and from Bellingham, Washington, to Key West, and can make himself easily understood. That is convenient, like a light bulb with a standard socket. It'll go into almost any socket. (But Christmas tree light bulbs are very lovely and very beautiful and there are big socket light bulbs, for big lamps, and they work perfectly well too.)

What we haven't realized is that when human beings live in different places, the geographical isolation will cause them to speak differently from one another so the Australians do speak differently from us and the South Africans speak differently from the Canadians. One can also be isolated by social class. We have social class dialects as well as geographical or regional dialects; and the tragic fact about social class is that it results from human snobbery, human injustice, and human exploitation. If you're very poor and you're not accepted as part of the mainstream of your culture, if you're shunted off to the side, and you do certain kinds of jobs but are not one of the major decision makers of the community, then your language will differ.

In all the closed societies of the past, this language distinction was the main barrier to prevent people from moving out of their place. The Danes have a shrewd comment about this: In the old days our aristocrats spoke French to one another; German to their merchants; and Danish to their dogs. This is their sarcastic way of saying that in the Danish medieval world there were three classes: aristocrats, bourgeois, and peons (peasants, serfs, whatever you wanted to call them.)

In our country we believe all men are equal in human dignity. We don't maintain they're equal in health, or mental acuity, or perceptive abilities. We don't insist that they're all equal in integrity or maturity, but we do maintain that our nation is founded on the idea that all people are equal in human worth. And yet we've had some of the elements of a closed society, particularly in our South, and even in the North there are attempts to maintain a closed society. You and I are living in one of the most exciting, challenging, and fascinating times in history when the struggle to shed a closed society is coming directly into the open.

Some children will come with a different set of syntactical patterns. One of the interesting ones is that of some black children who come to our schools. If they belong to a genuine dialect-speaking family, the verb to be will show some interesting differences from the syntactical patterns used in standard. In my research a boy who said his daddy got burned by a hot pipe belonged to a Negro family recently moved to Oakland from Northern Louisiana. If we talked about his daddy and Skippy said, "My daddy workin'" that meant his daddy had a job today, he was working today, he went this morning, he has a one-day job. (His daddy was out of work a great deal of the time because he did get burned by a hot pipe and was often in the hospital.) But if Skippy said, "My daddy be workin' at the Ford plant," that meant his daddy was working regularly. When Skippy put the verb "be" in and said, "He be working," that meant his daddy had a regular job, he went there last month, he's there today, and he's going tomorrow. In grammatical terms, this is the durative aspect of the verb; in fact, Skippy had aspect under complete control in his black dialect. Black dialect is as complicated as standard dialect. You just have to know a different set of syntactical rules. Before he came to kindergarten, Skippy knew them in his own dialect.

There is one nation so far in the world's history that has almost eliminated social class dialect. In that nation, social class dialect has almost withered away. This nation is now the wealthiest nation on the face of the earth and it isn't ours, I'm sorry to say. We have many poor people; we even have people near starvation. Sweden has no poor people. It considers poverty a disease to be stamped out. Over half of Kodak's darkroom personnel in Sweden are blind. Also the blind are trained to be locksmiths, sound technicians, musicians, and news-³casters. The blind Swedish divers are described in a recent article. Sweden is a very interesting nation. Having eliminated poverty, they have shifted over to the American comprehensive school to eradicate the old snobberies of the gymnasium. Today everybody in Sweden is to receive an education; actually by this time most people have. The

³"Blueprint for the Blind" in Sweden NOW, June 1970, pp. 33-42, Warfinges Vag 26, Fack S-104 25 Stockholm 30, Sweden.

result is that in this nation if you sit down on a park bench and meet somebody you don't know, it takes a good half-hour to discover whether this lady is a cleaning lady in the local hotel or the wealthy wife of a retired military general. Both would speak with the same standard speech. The difference will show up in vocabulary and in their interests.

On the other hand, Sweden is large enough so that regional accent exists. I like to use the term accent rather than dialect because all regional accents keep the same syntax. In our country if you listen to someone from Texas or New Hampshire, the intonation, the rhythm, differs but the syntax remains the same. And if you listen to someone from Savannah, Georgia, the syntax is still the same. I enjoy listening to all these different accents, yet they all use the same syntax. Sweden, also, is large enough so that its people still speak Norrland, Skane, Darlana, yet they all use the same syntax, the same grammaticality.

Now, many of our children come to school with different dialectical patterns. My point is that teachers should accept their indigenous language at the beginning. They are going to have to learn standard, as well as their native indigenous language, because the world punishes those who don't have the standard. In Hawaii where the Pidgin speaker learns to speak standard, he can be employed in any bank, in any good lucrative position. If he maintains Pidgin, a great many opportunities are going to be denied to him. He cannot enter some economic opportunities he wants; and some social groups will not accept him. So it is good to be able to handle standard as well as Pidgin. But many Pidgin speakers tell me, "I love to relax into Pidgin; it's the real me. When I go home from the bank it's like slipping off my high-heeled shoes and getting into comfortable slippers. With Grandma I begin to talk the Pidgin I knew as a child."

Now for your purposes I should think that some of you may deal with children who come from this kind of background. Thus you have an added complication to remember. There is nothing wrong with their ways; there is nothing inferior about their language and you are never to see anything wrong with it; but you do have the problem of teaching them one more dialect, the one we call standard English.

My own research begins with children at this point. At age five I began with 376 children in Oakland. I said I wanted a representative sample of the human race. That meant about half boys and half girls. Then I wanted about 35 percent black. I wanted some percentage of Oriental. I wanted a few American Indians and a lot of Caucasians. I wanted wealthy, average (a lot of them), and poor. I also wanted representation of all the religions: Greek Orthodox, Roman Catholic, Agnostic, Atheist, Lutheran, Fundamentalist, Southern Baptists, Northern Baptists, Seventh-Day Adventists.

Then I began to study these children. I discovered that those who spoke well to begin with, those who had power over the spoken language at age five, were the ones who became the best readers, the best writers, were the best listeners and speakers. I learned that there is no real hope of erecting a successful structure of reading for the normal child on an inadequate base of oral language.

As for the Spanish-speaking ones, until they learned the English oral language, they couldn't read the English language. I've concluded that if you have Spanish-speaking children, start teaching them to read in Spanish and develop a program in English at about third or fourth grade. At that time, when they can speak English, begin a reading program in English. However, maintain the Spanish because it is a wonderful thing to have two languages.

I had one group of children who were very weak in all language proficiency. A great many of them were also from poor families. Poverty, discrimination, disadvantages of various kinds in the life of a child create a disadvantaged, restricted language. Those children who were lower always remained lower. What an important thing for a small child before he comes to school to live in an environment that encourages him to talk, to explore the world and to put it into words, where the supper table is a place where everybody does a lot of talking and the children are listened to by the parents! There should also be adequate rest and nourishment, enough security with parents or parent surrogates so the child has a happy outgoing kind of experience. If the child doesn't have these advantages then the school must compensate for it with Head Start, kindergarten, and first grade programs.

I have a last thing to say to you. From years of teaching in the public schools, where conditions were poor, where we had inadequate supplies and materials, where we were fearful of our jobs, where we were underpaid, I learned something about teaching I would like to pass on to you. So much of one's waking day has to be spent at work that one can't afford to dislike the work. It is crucial to find some kind of deep involvement. Churchill had the same thought in mind when he spoke of Fortune's favored children, those whose work is their pleasure and whose pleasure it is to work. Robert Frost expressed it in a poem, "Two Tramps in Mudtime." Remember how it ends? "My vocation and my avocation must make one as my two eyes make one in sight; the work is play for mortal stakes."

STIMULATING USE OF HEARING IN DEAF-BLIND CHILDREN

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A major step in helping the hearing-impaired child to make maximum use of his residual hearing is to provide him with a wearable hearing aid. Since the period of optimum hearing readiness is the first year of life, the emphasis must be on early diagnosis and fitting. My own philosophy of hearing-aid fitting is similar to that expressed by Ciwa Griffiths of the HEAR Foundation in Los Angeles, and the Hardys of Johns Hopkins. All that needs to be determined initially is (1) degree of loss - mild, moderate, or severe, and (2) configuration of loss - straight loss or sloping. Appropriate hearing aids are then tried, and the child's response when wearing the different aids is used as the basis for the final hearing aid recommendation. In England the trend is toward overamplification in the early years, and no damage has been noted. This philosophy is in direct opposition to the traditionally cautious approach of most audiologists in this country to hearing-aid fitting of children. The fitting of individual aids is often put off for several years until an "accurate" audiogram is obtained and valuable auditory training time has been lost forever.

There is still controversy as to whether wearing binaural hearing aids - a separate aid for each ear - is advisable. A study was directed by Moe Bergman of Hunter College with deaf-blind adults comparing their performance when wearing monaural and binaural hearing aids. Although the discrimination scores were not significantly different in the two conditions, the subjects preferred wearing two aids because they believed they heard better and listened with greater ease. There was, of course, a significant improvement in their ability to localize, that is, to tell the direction of a sound. For this reason alone, binaural hearing aids should be the preferred fitting for deaf-blind individuals.

Sensory deprivation is multiplicative, not additive. Therefore, a child with a visual and auditory impairment must be given the opportunity to make maximum use of residual sight and hearing. I want to mention a third area of controversy involving hearing aid fitting - the use of low-frequency amplification. Until five years ago, hearing aids had a low-frequency cut-off at approximately 500 cps. Recently, broad-spectrum hearing aids have been put on the market, including the low frequencies down to 100 cps. However, many audiologists, for various reasons, are still reluctant to fit children with low-frequency aids. The writer (Franklin, CUNY, 1969) has found a significant increase in discrimination scores in normal-hearing subjects with the addition of the low frequencies, and is

now repeating the experiment using hearing-impaired adults. Since the majority of deaf and hard-of-hearing children have most of their residual hearing in the low frequencies, it would seem to be crucial for the deaf-blind child, in particular, to be fitted with these new extended-range hearing aids.

It is obvious from what I have already said that I believe that hearing-aid fitting and making maximum use of auditory skills are inseparable. In addition, I prefer that auditory training be done with the child's own properly fitted and functioning binaural hearing aids, rather than with auditory training equipment. The most valuable auditory training lessons in school are those which are based on the child's own needs, simulating real-life experiences, and which make use of his residual hearing in the most natural way. Using the child's own hearing aid is a major step in transferring classroom skills to the outside world.

An audiogram theoretically shows how much hearing an individual has, but cannot show how much an individual hears. A child with a severe hearing loss who has had early auditory training will often "hear" better than a child with a moderate loss who has had no training. The auditory training of the young child can perform a dual function: (1) for the child, to make maximum use of residual hearing, and (2) for the teacher, to make an ongoing assessment of the auditory function. I am suggesting that the testing and training of a young child's hearing should be inseparable. The teacher can train the child to make some sort of conditioned response to various auditory stimuli, and this response can then be elicited in the formal hearing-testing situation. The response can be as sophisticated as putting a peg in a hole, or as primitive as an eye-blink or head turning. The frequency range of each sound toy used by the teacher in the auditory training lesson can easily be analyzed with a sound spectrograph and these toys can be used to make an initial assessment of the frequency range of the child's residual hearing. Typical sound toys that have been used include bells, cymbals, clackers, and drums, as well as horns, whistles, moo balls, crickets, and squeeze toys.

There is a recommended progression of auditory skills to be developed:

1. Awareness of sound.

The child is taught the difference between the presence and absence of sound using noisemakers, music, and/or speech. Even the deaf-blind child with no vision can accomplish this task by feeling vibrations, whether in a loudspeaker, the teacher's face, a balloon, a drum, etc. If the child is unable to make a typical type of response to "sound - no sound" because of his handicapping conditions, he can probably be taught some sort of gross motor activity which he can stop at will when the sound stops - rocking, jumping, clapping, etc.

2. Sound discrimination.

The child is taught to differentiate between two different sound toys such as a bell and a clacker. The number of different sound toys is increased as the child learns each new discrimination task. This task can also be done using vowel sounds, for example, (1) "ah, oo," and (2) "ah, oo, ee," etc.

3. Rhythmic awareness.

a. The child is taught that a sound can be of long or short duration. For example, the teacher can blow a horn with a sustained sound or a short toot, and the child can imitate with his own horn. Music can also be used and the child can be taught to walk to a slow rhythm and run to a faster rhythm. This training can also be done with the voice, as vowels can be sustained or not, for example, "a---h," or "ah."

b. The child is taught to listen for the number of times a sound occurs. For example, the teacher beats three times on a drum, and the child imitates on his own drum. This can also be done with the voice, as the teacher, for example, can say: "bah," "bah, bah," or "bah, bah, bah," and the child repeats.

c. The child is taught rhythmic patterns using variations of long and short or loud and soft sounds. This can be done with a horn, for example:

TOOT, toot, toot - (loud, soft, soft)
to--ot, toot, toot - (long, short, short)
toot, toot----toot, toot - (short, short--pause--short, short)

This same task can be repeated with speech sounds when the child is ready:

"BAH, bah, bah"
"ba--h, bah, bah"
"bah, bah-----bah, bah"

4. Environmental sound discrimination.

The child is taught to discriminate environmental sounds, such as running water, door slamming, etc.

5. Speech discrimination.

Depending upon the amount of residual hearing, the child can learn to discriminate words and even complete sentences via the ear alone.

The preceding outline presents different types of auditory training activities which can be used to make maximum use of a child's residual hearing. However, the teacher is still left with the responsibility for developing appropriate responses to auditory stimuli in each deaf-blind child.

ORIENTATION AND MOBILITY READINESS SKILLS FOR THE PRESCHOOL DEAF-BLIND CHILD

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The processes of orientation and mobility for the preschool deaf-blind child involve his ability to understand his environment and to move independently and purposefully within it. The basic activities encompassing most aspects of the child's life are contingent upon these skills concept development, daily living, travel and play. These skills are the means by which he can learn to understand and control his environment, rather than allowing it to be the controlling influence over him.

As the child begins to control his environment and adequately move within it, he can grow cognitively and physically; he can increase his self-assurance and his curiosity; and, he can become more independent. In turn, he can increase his motivation for further movement and exploration of his environment. A cycle develops. This cycle is based on his sequential learning of readiness skills and specific orientation and mobility skills which encourage the continuation and expansion of his learnings, controls, and his independence.

The necessary readiness skills can be taught or at least initiated on an infantile level. This will not only prevent major gaps in the child's learning and development, but also will prevent his acquiring improper concepts and techniques which will later need to be unlearned prior to the establishment of more efficient ones for meaningful orientation and mobility.

The Preschool Deaf-Blind Child

This child is defined here as any child who has a visual impairment, a hearing impairment, and who is functioning on a preschool level. The visual impairment may be a functional loss from hard-of-hearing to profound deafness. The preschool definition includes children from birth to a developmental level equivalent to that of normal standards for entrance into an educational program for the deaf or blind.

Orientation

The concept of orientation is based on the child's knowledge and awareness of his complex environment. The child needs to not only understand his surroundings, but also his relationship to them.

To gain this familiarity he must learn how to utilize all of his remaining and residual senses. This learning is sequential. It begins at birth and continues with refinements throughout his life. It is a systematic, life-long learning process.

Mobility

The concept of mobility is essentially his ability to move. This movement may be minimal (an extension of a limb or a step), or more extensive (from one room or building to another). Mobility requires the child to have the capacity, the readiness, the ability, and the motivation to move. Capacity is the child's physical potential to move his body independently. As this is difficult to assess, the child should be given the benefit of all doubts. Readiness includes the necessary physical and sensory skills to achieve the movement. Ability is the stage after the readiness skills have been coordinated with some specific techniques to allow the movement to be realistic and meaningful for the individual child in the particular situation. The critical factor is motivation. The child must want to move or have a reason to move. This factor is reduced as the vision and the hearing of the child are reduced.

These are the major senses which draw a child's attention and curiosity, prompting him to move toward a particular stimulus. The motivation factor for many deaf-blind children is almost nonexistent or limited only toward light.

You are all teaching readiness for orientation and mobility as you help the child become aware of his surroundings and his relationship to them. It is a continuous process involving concept development and movement, not a single activity taught for a few minutes a day.

Prior to learning about his surroundings the deaf-blind child must distinguish himself from his surroundings. He needs to be aware of his body and its various parts. Utilizing all of the child's senses he must recognize a stimulus as either part of himself or "something else." For example, he must be aware that he has a hand and that his hand has parts. Then, he can distinguish between his hand itself and what it is holding or touching. When he can make this distinction, the "something else" can be meaningfully explored. The child's perceptions need to be developed so as to allow him to differentiate one part of the environment from another by size, shape, texture, temperature, color, smell, movement, and/or sound. The sensory impressions may be derived through direct contact with the stimulus, through residual hearing and vision, and/or through smell. If the child's perceptions are vague or distorted, the concepts developed from them cannot be realistic. Therefore, you will have to make a conscious effort to guide and direct his experiences.

As the child begins to differentiate his environment, he must gain meaningful concepts about the objects in his immediate surroundings. He must become aware of these objects, recognize them and interpret them. Experiences must be with the REAL OBJECT in a meaningful way: Lie on a bed; Sit on a chair; Eat with a spoon; Drink from a cup; Put on a shoe; Open a door; Pet a dog. If an object is used for many purposes, the child may be confused. Objects should have a purpose which is understandable and meaningful to the child.

There are basically three types of object stimuli in the environment: stationary objects, moving objects and movable objects. Stationary objects are those which are either permanently in one location, like a wall, a sink, a door, or a tree; or those which are never moved, as a refrigerator, or a stove. Stationary objects can serve as a reference point from which other objects or directions may be located. The towels are to the right of the sink. The class door is to the left of the water fountain. Moving objects are those which may be in motion; like a car, a bike, a person or an animal. Movable objects are those whose location may be changed, but are not "in motion"; as a toy, a chair, a table or a glass. Both moving and movable objects are subject to a change in location. The child needs to be introduced to change so he can learn to understand and accept it.

To learn about his environment, the deaf-blind child must develop the processes of gathering, recognizing and interpreting the available sensory information into meaningful and useful concepts. To do this he must learn how to use ALL of his remaining and residual senses. Remaining and residual senses are all the senses available to the child, including visual, auditory, tactual-thermal, kinesthetic, proprioceptive and olfactory (the sense of taste has questionable value for the child's orientation and mobility, but may be used either to motivate, clarify, or reward during the learning process). The remaining senses are those which are undamaged and normal in capacity, but nevertheless have some potential for receiving information regardless of how minimal. Both the remaining and the residual senses need to be trained.

The training or developing of any particular sense must progress through five phases to become an avenue to receive meaningful information: (1) tolerance, (2) awareness, (3) recognition, (4) interpretation, and (5) application. Tolerance is simply the child's permissiveness toward contact with the stimulus. Awareness is the child's realization that the particular stimulus exists. Recognition is the child's realization that the particular stimulus is something with which he has had previous contact. Interpretation is the recognition of the stimulus and its purpose. Application is the child's use of the stimulus purposefully.

Tactual Sense

This sense must not be restricted only to touch with the hands. ALL parts of the body are involved whether the child touches a stimulus or it touches him. Removal of shoes and clothing allows the child to use his entire body to develop awareness and gather information. It is strongly suggested that you remove your shoes so you will know what clues are available.

Tolerance of tactual and thermal stimuli can be developed through frequent whole body exposure to a wide variety of experiences. This should be continued until the child will allow contact with the stimulus for a period of time sufficient for his exploration of it. Examples include: swimming, playing in a sandbox, rolling on the grass, walking barefoot through boxes of textures, rolling up in blankets, crawling on a rug, moving on warm and cold cement.

Awareness of tactual and thermal may be developed in conjunction with another sense. Some rubella children are tactually defensive and therefore need a more active experience with the stimulus to become aware of its existence. You may need to physically move the child's body through, over and around the stimulus. A multi-sensory approach might include light, sound and movement to draw and maintain the child's attention to the texture. As an example, a vibrator may be covered with the desired texture and placed on the floor in a dark room. A light is focused on it to draw the child's attention. The vibration is used to maintain and reward the child's contact with the texture.

Recognition of the stimulus tactually may occur from its size, shape, texture, temperature or through a combination of these. If the subject is movable, it should appear in a variety of appropriate situations. Interpretation includes recognition and its purpose. The purpose needs to be meaningful to the child, but it does not necessarily have to be the same purpose you deem correct. The stimulus may be a clue to where he is, what is occurring, what will occur, who it is, or what it is for. Application is simply using the tactual knowledge purposefully.

Visual Sense

The potential usefulness of this sense will vary depending on the amount of the residual vision. The evaluation should be made functionally with a full knowledge of the available medical data. If recognition of some objects is possible through this sense, presentation of the object should be made in good light, but not in a direct line with a light source. The range and angle for the best use of vision can be obtained by observing the child holding an object for visual inspection (excluding shadow play). If the

range or angle is limited or unusual, you can use it as a focal point from which objects can be held for possible expansion of the functional range.

Tolerance of light should not be a problem; rather, most children use their visual sense for self-stimulating shadow-play or autophobic behavior. While focusing their attention directly at a light source, they cannot be receiving any pertinent visual information. Tolerance of a visual stimuli, other than a direct light, begins by directing the child's attention away from the light toward a potentially visually meaningful object not in a direct path with light.

Awareness of visual stimuli. The use of a dark room with a controlled light source has proven effective for inducing children to become aware of visual stimuli. The dark room demands that the child use his residual senses as other sensory avenues are reduced to a minimum.

Recognition and interpretation of the visual stimuli come with the realization that the stimulus is familiar and with the recognition of its purpose. Application is the purposeful use of that visual clue. The object may be identifiable by its color, size, shape and/or movement. It is important that the child become aware of various visual characteristics so he can begin to "see" the unique and identifying features.

Auditory Sense

This sense will vary as to its potential usefulness to the child, depending on the amount of residual hearing. A functional evaluation should be made with knowledge of the available medical data. Proper amplification should be used if appropriate for the child.

Tolerance of sound may be a problem as some children "tune out" or avoid listening to sound. Initially the child may need to be conditioned to allow the maximum amount of sound to be heard. Reward for tolerating sounds might be vibration, light or a favorite object. This stage may include tolerance of a new aid or headset.

Awareness of sounds may be assisted by a light and/or vibration connected to it. A strong rhythm may be enhanced by motorically involving the child, such as clapping his hands, or having him beat a drum. At this stage it is important that the child begin to be aware of sound sources (those objects in the environment which produce sounds): an instrument, a machine or a person.

Recognition and interpretation of sound will best be realized through more formalized auditory training techniques appropriate to

the needs and to the loss of the child. This should be under the direction of a teacher skilled in working with the deaf and hard-of-hearing. When the child recognizes sound, he should begin to locate it. This means locating the direction from which the sound comes. Then he should begin to recognize the sound source. This source can be a clue to his environment and location; where he is, what is occurring, and/or who it is. The sound of a vacuum cleaner describes what someone is doing; and the localization tells where it is happening.

The rhythm of sounds should not be neglected. Each child has a unique body rhythm which needs help to develop. This rhythm will affect his walking and his exploration. The child can internalize various external rhythms through directed movement, such as beating a drum, tapping or swinging his feet, moving or relaxing on a vibrating board, having someone tap the child to a specific rhythm.

Proprioceptive and Kinesthetic Senses

The proprioceptive and kinesthetic senses involve the child's ability to know the relationships of his body parts without using his other senses. The former is while the body is still, the latter while his body is in motion. Initially a multi-sensory approach is necessary, using all available senses. The child's awareness of these senses will assist with his interpretation of himself, and his relationship to his surroundings. Many activities, including rolling, rocking, patterning and movement of the limbs, always with the appropriate verbalizations, encourages this awareness. You can repeatedly pat the child's body, saying what it is. This can be done on the mat or in front of a mirror. The child needs to be aware of his body; that it has many movable parts, and have a clear concept of what they can do. The child then learns to appropriately move a particular part of his body on command, and later can move it with control at will. Later activities involving moving the body through space will encourage his awareness of his relation to space: swinging, bending, twisting, walking, jumping, climbing and rolling.

The Olfactory Sense

The olfactory sense has limited value for orientation and mobility, but it can assist in the interpretation of his environment, which is primarily "viewed" through the other senses. Many objects, areas, animals and people have specific identifying odors. The child needs multi-sensory experiences with a stimulus with a definite odor many times. Initially it should be explored through other senses to insure a clear concept of the object source, with secondary emphasis on the smell. An orange, for example, has a distinctive color, a definite shape, a specific texture, probably a familiar taste, and an identifiable smell.

The more means by which the deaf-blind child has to increase his sensory input of information about his environment and make appropriate interpretations, the better will be his potential for independent functioning. Although the senses were discussed separately, they should not be taught as isolated areas. The multi-sensory approach is most effective. The senses are inter-related, with each adding information to clarify and refine concepts. If he is aware of all the aspects of an object, he will eventually judge for himself which characteristics are most significant and identifying.

Physical Readiness

Physical readiness is equally as important as sensory awareness. The rubella child may not naturally progress through the various sequential states of physical growth and development, reaching plateaus at "normal" chronological ages. His delayed development may need active physical assistance to encourage growth. The stages may occur out of order, be totally omitted, or only partially completed. Therefore, each child needs to have a continuous functional evaluation of his physical development, including teacher observations and medical evaluations by the necessary specialists. With such information, a physical program can be designed which will provide the opportunity for his maximum growth.

Utilizing all the child's senses to motivate and maintain his movements, an adult can guide and direct the child through purposeful activities. The child may be in a prone position, sitting on the floor, kneeling, standing or bending over. The surface for the activities should be varied so as to include many tactual and kinesthetic experiences: hard and soft mats, rugs, floors, grass, flat surfaces, and inclines. Through a sequentially planned program of motor development, the child can begin to strengthen and control his muscles while he gains necessary concepts about his body parts and the movements they are capable of making.

It is vital that the child become mobile, initially, in ANY fashion! The concept of movement, first, for its own sake and then for a purpose, is essential to orientation and mobility. Without movement, there is little, if any, learning or gaining of independence for the deaf-blind child. If he is capable of an acceptable method of mobility like crawling or walking inappropriate methods should be discouraged. Once the child can maintain an upright position with some stability, and he becomes mobile in that position, specific readiness for mobility skills can be introduced.

It should be noted that depending on the age of the child and/or his developmental stage, it may be appropriate to initiate an upright position before all of the previous steps have been completed. More than one task, such as crawling and walking, may

be worked on simultaneously. Even if the child is not self-motivated to an upright position, he needs to assume that "viewpoint", visually, auditorily, and tactually, which will be natural for him the rest of his life. The sensory stimuli appear differently, depending on the child's physical position, or the child's point of reference. To encourage realistic concept development, the natural viewpoint is necessary.

Once walking is accomplished in a crude form, it is necessary to assist the child so that he will make the proper refinements in his balance, posture, gait, rhythm and coordination of body parts, without gross problems.

Balance. To initially work on balance, the use of parallel bars is suggested. This allows the child to use his arms to maintain balance and not depend on an adult. Later, walking a balance beam, walking on a slat board, and standing on a balance board are suggested. All balance activities should be taught in sequential steps appropriate for the child. Once the balance is gained, gently pushing the child off balance so he can learn to independently regain it, or simply learn to fall, can prepare him for those unknown objects which will appear in his path.

Posture. At the preschool level concentration on posture assists movement and can prevent the child from acquiring poor habits, which are difficult to unlearn later. The head position is the most difficult for many children, as they tilt their head back attempting to look directly at a light source, such as the sun or an overhead light fixture. A moving light target at the child's eye level will motivate travel and keep the head erect and facing forward. The same standards used for other children at the same developmental level should be followed for the trunk, arm, leg and foot positions. If there are physical complications or limitations, the services of a physical therapist should be included. Periodic reports from the orthopedist, to insure that proper posture is being followed, are advisable.

Gait and Stride. After the child can walk with some degree of freedom, the consistency and appropriateness of his gait and stride should be considered. Let the child walk through the rungs of a ladder on the ground, in and out of shallow boxes placed at an appropriate stride length, or, if the vision permits, on footprints or colored squares taped to the floor. The stride is thus controlled. The child must learn to walk with an adult holding his hands, without falling behind or lunging ahead. The consistency and appropriateness are learned through trial and error, under the guidance and direction of an adult, over the long period of time from the beginning of walking. Later techniques will require these skills.

Rhythm. The child first develops the ability to move his body with the assistance of an outside rhythm stimulus, and later is guided by his inner body rhythm, which is unique to himself. The outside rhythm stimulus may be the beating of a drum; the distinct rhythm of a march, or song; or, through work on a vibrating surface connected to a sound stimulus, which allows the child to feel the rhythm through the entire body without necessitating the use of hearing. The development of the child's individual body rhythm will be encouraged by playing preschool games and songs which motivate movement; motor development activities with an outside rhythm stimulus; and, the coordination of the senses to understand rhythm. To encourage this unique body rhythm, there needs to be a balance of structured and creative movement.

Coordination of body parts. To move each limb independently at will does not insure the ability of the child to coordinate more than one body part with another. Walking not only requires that the child be able to synchronize the movements of his legs, but also coordinate the swing of his arms, and to avoid the movements of limbs, head or trunk. Initial coordination begins with two limbs (i.e., lift one hand and one foot; lift two hands and one foot). The actual arm movements while walking can be encouraged through walking hand in hand with an adult who synchronizes his stride to that of the child, and actually moves the one hand for the child in a free-flowing movement appropriate to the foot placement.

When the child can negotiate a relatively straight line of travel on flat ground, independently, the walking should include ascending and descending stairs and walking on slopes. Although it is assumed that the child has been attempting these before, he should begin to refine these techniques now.

On the stairs the child should eventually alternate his steps with only one foot on a stair, preferably using the railing, with no adult to assist his balance. Initially the steps should not be too deep or high and should be consistent in their dimensions. The child may need to have his feet moved for him to learn the proper movement, but then should be allowed to independently climb them repeatedly until he can do so with ease and consistency of movement. A gentle slope should be used to introduce the idea of a slant, then slowly increase the grade.

The child needs to begin to use his senses and body awareness in conjunction with the physical act of moving. Although the process of physical readiness is long, and the coordination of the senses, especially hearing and vision, while in motion is difficult, the rewards to the child make it necessary that he have the opportunity to become fully physically ready to move prior to teaching him specific travel skills. The child must want to move; thus he must feel secure while moving, or, although capable, he may not move due to fear or lack of motivation.

IMPLICATIONS FOR FUTURE PLANNING
An Outline

Karen Campbell
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for Multi-Handicapped Children

I. Services for Multi-Handicapped Children

- A. Get multi-handicapped children into programs at the earliest possible age.
- B. Continuation of, reinforcement of, and increase of pre-school services for multi-handicapped children, (such as those given by Evelyn Carr, Janet Brown, Nancy Akesson, and Sharon McCarthy).
- C. For Southern California, increase or omit age limit (6 years) on children served by preschool workers.
- D. Freedom for all teachers to participate in home visitations, and increase of home visitations by preschool workers to homes of multi-handicapped children.

II. College Connected Programs and Use of Student Aides

- A. Training of college students from junior colleges, universities, or private colleges while they are working directly with the children in an aide capacity.
- B. Use of high school aides (as L.O.V.E., Life Or Vocational Experience Program, in Azusa, where they receive high school credit for working with the multi-handicapped children). Growth occurs in high school students while they are helping the children, and some are motivated to go on to train in the field of special education.
- C. Postgraduate training in this area should include training from all fields (e.g., deaf, blind, mentally retarded, language disordered, orthopedically handicapped, and emotionally disturbed) so that the teacher is truly a teacher of multi-handicapped children and not simply, for example, of deaf-blind children.

III. Communication

- A. More research done relating to how rubella children learn.
- B. Many appear to learn more efficiently visually and tactually. Based upon this, manual language used with these children has proved to be of great value to them in terms of their communication process. What has happened to some of our children using it is beautiful.

IMPLICATIONS FOR FUTURE PLANNING

Irma Hall
Teacher, Orange County
Educational Assessment Center

Our Assessment Center might be said to have a theme word: "multi-", as we are involved with multiple handicaps, staffed by a team with multiple backgrounds, devoted to the multisensory approach. We are committed to the development of assessment instruments which will be useful for bringing multiple resources for the education of handicapped children with special education problems to the many classroom teachers, not just to the specialist in a particular area of disability. With this focus, I have found this conference to be a most rewarding experience, bringing, as it does, information and ideas from many disciplines and many viewpoints on the multiply handicapped child.

We believe that good assessment and good teaching are inseparable if the maximum potential of each child is to be realized, and must involve the best resources of the teacher, the physician, the special consultant, and, as a synthesizer, the educational specialist. It also will engage the family, and even the community at times, in the evaluation of fruitful educational paths toward the individual child's capabilities. The responsibility for making goals and procedures mutually understood among all of these significant people is a large one, and we feel strongly that educational processes are developing for us also - understanding is an exchange of effort between physician and specialist, between specialist and parent, among all of those who hope to bring their skills and insights to bear on the education of a child.

To implement these goals we have undertaken to observe the child in school, home, and Center, using the behavioral approach which has received such emphasis during this conference. Our instruments are not now fully developed, but in the coming year we plan to test hypotheses, recycle processes, and work out an educationally focused, transmittable process for general use by the regular classroom teacher. Clearly this will be a mutual process between teacher and child, as well as between specialist and child. The point has often been made in this conference that we learn from the child. We subscribe fully to this, and to the viewpoint that we, as specialists in assessment, will also learn from the classroom teacher, as it is upon her feedback from the use of assessment instruments with the child in the classroom that we will depend for refining and sophistication of our instruments and our approaches to the problems of the child. I feel that actually any child who has "a handicap" is really a multiply handicapped child, because his initial disabling condition sets up a series of learning problems, whatever the start may be.

Therefore, the material presented in this conference has been rewarding far beyond the limits of the deaf-blind child; to us it has applicable facets for every one of the thirty children we have had this year, in five disability groups. We expect to move on with a wider range of children, but the same multi-faceted goals: to bring the resources of a multi-disciplinary team to bear on the assessment of multi-handicapped children, and make the recommended educational processes accessible and heuristic for the multiple disciplines and individuals involved with the development of these children.

SUMMARY AND CONCLUSIONS

Pauline Moor
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Don't be frightened by the number of pages that I have. It was awfully hard to take down all the things that you were saying here. And particularly all the things that were going on in discussion. I think we are living in a time of great change and I'm really impressed with the fact of change when I come back to San Francisco after having been away for some time and I see all the great buildings getting taller and taller and I go down on the street and I see the people in their dress and the way things are changing in that way too. We're changing in education and we have certainly been changing in special education. One major thrust as you know in special education has been interest, concern, and action and even with some federal support, on behalf of children who are both deaf and blind.

But again I want to emphasize the fact that we would never have been here today if it had not been for the rubella epidemic of 1963 and 1965, which left in its wake 20,000 multiply impaired children at a minimum. That's considered a very conservative estimate - as you know. And of this number at least 15 to 20 percent of these children are reported as having both visual and hearing impairments. A very few children escaped even some minor kind of impairment.

We have heard mention of the legislation which set up the "centers." Everybody thought at first the center was going to be a great big place where you could go in and get all the service, ready and all available. The center as it started out was really a concept of where service would be available - let's say of information, like a clearing house of service. People would know at the center where services were available. Then we began trying to find out which children were in our geographical area and trying to provide some diagnostic services.

I thought what I would do this afternoon in the time allotted to me was to think of our three days here as being a kind of kaleidoscopic picture of what is going on. Now if you have a kaleidoscope you know what happens if you turn it the least little bit one way or another. You see the same pieces but they fall into a different shape; you see the same colors but they take on a different figuration at different times, and I think that is what we have been doing while we've been here. Sometimes we were thinking of the shape as being a child with some individual impairment. Sometimes the picture was of a child with hearing impairment. Sometimes the picture was of a child with sight impairment. Sometimes we were thinking about the general fortitude of this child;

what he has and what he doesn't have -- his heart and the other conditions which he has, but then all the time as a part of this picture we were trying to fit ourselves in to see where we are.

We started off thinking about normal development and I'm not going to review with you everything that has been said here, but I wanted to bring out some of the things that I think are sort of outstanding in our thinking of the last three days. We started thinking about normal development because if one doesn't really know normal development how can one detect any kind of a deviation.

I have listed some of the things which we were talking about in our group discussions and other places and I am inserting some of the things that I think are characteristic of some of our children. We talked first about the dependency of the child and we realize that the dependency of a handicapped child is even greater - much greater. We talked about recognition of the first 24 months of life and what a critical and crucial period it is. And then we were thinking about the anxiety of the parents of a child who has sensory impairment-- the feelings of guilt and bewilderment they have and certainly the feelings of inadequacy at this particular time, at this crucial time when they should be so ready to give of themselves. We're thinking about a relationship between a parent and a child and how all during this period the relationship is strengthened normally. It is a strengthening for both the mother of the new baby and for the baby as he grows. And yet here we were talking about families and thinking about families where perhaps sometimes a mother couldn't even hold her child; sometimes couldn't even look at him; couldn't even think of him; couldn't even call him by name, referred to the blind or deaf baby as "it." You've had this experience, I'm sure. We were talking about a time when parents normally pour out admiration toward their child. They take great pride in the child's accomplishments. And here we were thinking also at the same time of the children with whom we are working and the families who are so depressed by the child's condition. As they watch an increasing lag as the baby grows older, they realize that some of the other steps of achievement should be coming along. There has been a great deal of mention of a sense of trust here the last three days. Somebody said it is perhaps a distrust on the part of the child who has lost his hearing.

We talked about the mother's need for the child and the mother's need for the child to react to her. And how important this is during this very critical period. We also pointed out the fact that the child offers little feedback and at the same time he is offering little, he's making many demands on her. Demands of effort; demands on her time; demands as far as physical activity is concerned: feeding, toileting, wondering about her child and the lack of motivation on the part of her child, how can the mother do something to stir him up and make him more attentive and, of course, how can she communicate with him?

Then we proceeded to discuss some of the evaluations of the child and we realize the meagerness of our existing instruments when it comes to applying them to children who are very multiply impaired, but fortunately there are those persons who are concerned about this fact of instruments which are appropriate and we heard discussions of two -- one pertaining to the multisensory impaired child and another good one emphasizing the sensory motor development of the child. I'm not going to go into these because you had such a beautiful explanation of these the other afternoon.

This brought us up again to the language development of the child and the recognition of the fact that man is the only animal who is capable of using symbols for his speech. I was intrigued by the idea of how far man has progressed as far as his language is concerned and how he used the various symbols and the various signs. And what are some of the dialects which we speak. Man has an innate propensity to speech and he is even wired, as our speaker said, to want to speak, and yet we are dealing with children who are so lacking in communication and it is so hard to try to bring this about.

We emphasized the importance of opportunity to help children use the residual hearing which they have and the residual sight which they have. A plea was made for diagnostic teaching, for those of us who are working with a child to try to fathom if we can, what are his real needs. How is he functioning? And again another plea for a functional evaluation of the child as we are working with him.

All right, now there were several things that kept cropping up and I've just listed them. And these are some of the phrases. I think when you go back home you're going to latch on to some of these phrases sometime and remember what was said about some of these various aspects. And again I listed these with no priority at all, just as they came to my attention. Diagnostic teaching, hearing aids - various types, and have you tried various types? - the lag between diagnosis and delivery of service, the right program for the child - do you need a diagnosis first? Are professional people going to do this alone? Do we need and should we have to a certain extent benefits from the volunteers and aides? This goes back to our discussion of credentials.

What are some of the needs of the children? We talked a little bit about their need to be with normal children. We didn't go into this too much did we? But I felt that this was coming through a little bit even though we kept saying to ourselves, he's not at this level, he's not ready to go on to something else yet. And yet what do we learn from being around other children? What does one child learn from another child? I don't think in our service we've got to the point where we are introducing more children into the regular educational programs. I don't know if

we will beyond a limited extent, but certainly I think we need to consider what kind of associations with other children will benefit this child.

We talked about meaningful rewards. And we were quite distressed that sometimes we couldn't find a real meaningful reward, but you have some excellent suggestions. Included are the emotional reactions to surgery and how this affects both family and child. Mention was made again of the point of the constriction of a child in a sheet and the speaker said here that "I would panic if this happened." Did you ever think how you would feel if you were completely wrapped in a sheet and you couldn't move your arms?

There is a need for immediate and continued help--the needs of parents for supportive help and your need for support. You people who are getting down on the floor everyday in your bare feet or otherwise, you know it is a drain on you and I sometimes think that the rest of us don't always realize what this drain is. Not only a drain physically but a certain drain emotionally. You ask yourself "What have I done today?" "Can I see any progress?" And sometimes you just don't see it. And then once in a while you see just a little bit. He pushed it away or he really put it on - these little things become nuggets that help you along in your daily work. It takes something out of you. This is why you have to be a special kind of person to work with these children.

Home visits, signing as a dialect, handling the child, touch, smell, sound. I've written down some sentences here that were kind of like pearls in the discussion groups. I'm sure you wrote your own down too, but let me share with you some that I have.

"When the staff became expert, the children regressed."
"Every human has within him the innate propensity to speak." "There is really no right way. The teacher must feel free." She must feel comfortable to try new ways and she must have an open mind. "Your language will give you away. Your touch will also reveal you." "Watch out for the labels--the labeling put on parents as well as the labels on children."

What happens when a child leaves the program? Do you know where he goes? What are the alternatives to institutionalization?

Then we heard about being turned on, being turned off. We heard about input and output. Someone said the input of language has to come before there is any feedback from a child. I would say there has to be an amount of input in other ways too. There has to be a lot of "you" going into the child before there can be anything coming back.

There are certain configurations in this kaleidoscope which seem to be standing out and again you have your own - just let me share with you the ones that I jotted down. We as educators must look at the life span of a child. You can't cut him up into the birth, the toddler, the preschool, the growing child. The child begins to learn at birth and the first months are so important. What are the learning opportunities which he has at this time? What are the opportunities which he has to learn about himself? What are the opportunities he has to learn about the world? The fact stands out that you and I both know that when a child has severe sensory impairment he is much more vulnerable to any kind of learning opportunities or to any kind of an emotional feeling which flows out to him. He needs so much of the quality of "mothering." And I will put mothering in quotes because it means all the care, the physical care, the belief and confidence in a child, the pride of the child means so much to his well-being.

The second thing which I have jotted down here is a need for an understanding of the affects of any kind of a sensory loss. Particularly in evaluating the potential of the child and again in trying to understand the functional level at which he operates. What happens when he doesn't see? What are the behavior patterns and how are they observed? How do you observe these behavior patterns? You may have an interpretation of these behavior patterns in terms of what they might be for a child who can hear. Or in terms of what they might be for a child who can see. But there must be some kind of a purpose behind this. I think we illustrated this the other day--some of the peculiar ways which can be communication for the children and must certainly have meaning. You know what I'm referring to. I'm referring to those "mannerisms" about which there is a growing body of literature. If you're interested in this, write to us sometime and just ask us to share with you some of the different types of articles on mannerisms of children. I think one of the most enlightening articles is one by a man living in Boston on unconscious level of behavior of blind children. He really believes that there are certain mannerisms which have a definite need for the child and there are others that the child resorts to but he does it at different times and when he must have different meanings to it. I can't go into it at this point, but we're all concerned about it.

The third point is language. And again I've already mentioned it being part of being human. Are you all familiar with a very delightful account of the work of a psychologist at Harvard who was interested in speech and he thought he could teach speech, not only to human beings, but to other animals and he wrote a delightful article on "What Does Talking Bird Talk?" Have you read that? He went to South America and got some beautiful, colorful birds. He brought them back to the laboratory at Harvard where they were studying speech and the development of language.

They knew that they had good subjects and they tried all of the various techniques of teaching speech to these birds that were all around the room. Well, all the birds did was squawk back. They were really not learning any words. But the professor took one of the birds home with him, put him up in the kitchen and every day he looked at him, admired him, approached him, talked with him, and certain words were naturally repeated many times and, of course you know what happened. The bird began to repeat and come back to him with the words. The whole brunt of this was that along with everybody else where there was a great deal of confusion and all the other things that went on among the other birds, it was much harder to learn some of speech sounds. But when the bird had the professor's individual attention and there was a relationship established - I like to think of this as a relationship even between the bird and the professor - the bird began to respond.

Movement is an ingredient of learning, opening up the world to you, but especially as an ingredient in helping the child feel who he is, that he is a person in his own right. He can do things, he can be independent. He is a growing human being.

Professional persons need supportive help too, as I mentioned earlier. We need to have something which helps us tackle what is ahead of us. And I would say that maybe coming here to a seminar or institute of this kind - I'm sure it's going to affect you the way it affects me. You're going to be able to go back and put some depth into what you're doing. You've got new ideas, you've met other people. You, like the parents, are not alone in this. You've got other people who are interested and people who are going to be helpful and you're going to have other opportunities for sharing your ideas as you have had here. It's important because we must approach our work with enthusiasm. Not only an enthusiasm, but as our speaker was saying the other day, we have to get something out of this too. And I think that this kind of a session is one of those ways that opens up opportunity for getting revitalized. Or being able to go back and look perhaps with even different perspective upon what we are doing. Think about each child. Think about how we can help - how can I help this particular child?

There is something that I thought of last night and I guess it's because I've been out visiting the coast, and again, I'd just like to share this thought with you. I was going down Fifth Avenue one day recently - it's kind of fun going down Fifth Avenue now that the skirts are getting longer and you see the styles changing and so on and so forth - and you look at all the windows and see what's there, etc., and there was one window that had photographs in it. And I guess there was one big picture that drew my attention. The reason for it was that there was nothing in the picture. I looked at it - oh, it was a great big photograph. I looked at it and I thought rock, just rock. Then I stepped back and then I stopped a little closer and tried to see what was there. What

intrigued the photographer so that he took a picture of just a side of rock? And then as I looked very carefully I saw a little alpine flower growing out between one of the cracks in the rock. Just a little red alpine flower. It looked as if it were all black laced on. Down below was the caption and it said, "When you try to pick out anything by itself, you find it is hitched to everything in the universe." I think of this in the development of the child. We cannot pick out single factors because they are all hitched to the whole. The needs of the child are all interrelated and we too interrelate our efforts if we are going to serve these children who present such a complexity of problems and who really put something forth to us and make us strive to find. But I believe that it is only in this way as we interrelate all our efforts that we're going to help the child to bloom and to push up through the crevices of the seemingly unreal world around him.

A FINAL WORD

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I have been most impressed, during this conference, with the sophistication and expertise we have developed in just the past year. Many of you may feel that we are far from being very expert or sophisticated in our approaches with deaf-blind children, but obvious progress has been made. I keep thinking about the topics discussed at previous institutes, conferences, and workshops relating to services to deaf-blind children, and the emphasis was always on early developmental living skills - primitive living skills, really - the kind of competencies that very young children need simply to function with a little less direct adult attention. We talked about generalities, such as attaining the attention of children and helping them be more aware of their environment, and we even discussed in vague and sometimes idealistic terms, the establishment of programs. While those concerns are still with us all, because we certainly have not begun to make inroads with some children in even the most primitive living skills and ability to attend to a task, and even though we haven't established programs to the extent that we would like, we've gone beyond what might have been expected, and I think that it has been evident in the past few days.

We're talking more now about definable curricula, we're talking about areas such as hearing stimulation and we're talking more authoritatively about it, because we have gained some knowledge and experience about stimulation of hearing, and also because we have been able to involve people in our concerns who have experience and knowledge about hearing stimulation. We've been talking about vision stimulation, and many of you know that this is a very timely and critical problem in the whole field of visually handicapped today. There is a tremendous impetus, from the Federal Government on down, to implement some of the findings of prior research related to the stimulation of vision in programs for visually handicapped children. We have finally buried the old ideas of sight conservation and sight saving for low vision children, and are able, in a much more knowledgeable way, to begin working with children on ways in which they might use whatever residual vision they have to its optimum.

We've talked about language development, and certainly this is an area of concern to us all since I know that most of you have experienced the same frustrations and the same failures as I have in attempting to develop some level of expressive language in deaf-blind children.

We've talked about motor development and mobility instruction, and as we become more tuned in to some of the current findings in perceptual-motor development we become more aware of some of the real needs for intervention in the area of developmental movement in deaf-blind children. We're looking to mobility specialists for help in this area, and to the surprise of some of us, I'm sure, mobility instructors are responding to this need and are concerned and interested in it.

What we have done in the past few days is to specify curriculum which we have identified as being critical to the needs of deaf-blind children. We could have done this a year ago or two years ago, but not with such certainty as we can at this point in our work with these children. We have also attempted, during this conference, to relate deaf-blind children, their growth, development and their needs, to those of normal children. We have attempted to be realistic about this; to recognize the extreme sensory deprivation which the children with whom we're working are subject to, and yet we also recognize the need to be able to place in perspective the developmental levels at which deaf-blind children are operating.

One of the areas discussed by one of the work groups touched on what I think is an issue which requires some special consideration. There's a very delicate balance, which we must keep in mind, between the use of unnatural environments in order to stimulate children and the necessity for children to operate in normal everyday surroundings. To be sure, classrooms are not natural environments for any children, but the capable, competent teacher will be able to relate and associate the classroom with the community and with the outside world.

The necessity of concentrating sensory experiences for children within a classroom, and sometimes within a very confining area, requires us to use materials and techniques which are far from being those which children would encounter in normal everyday activities. Some of you, I'm sure, are aware of the Sensory Stimulation Center at the Oregon School for the Blind. Under the direction of Mr. Charles Woodcock, the Superintendent of the Oregon School, a very creative, exciting, unnatural environment has been constructed in which children, within the close confines of a small room, can experience a wide variety of sensory stimuli. To say that this is not appropriate because it is not occurring in normal day to day activities is true. However, we need to keep in mind the necessity for children who have so limited opportunities to come in direct contact with their surroundings, with their environment, that we must bring the environment to them, and often this must be done in ways which are manufactured. So we construct environments which are not real. We stimulate children with light shows, we bring tactually exciting things to a child which may not be functionally appropriate in any way.

I think we can justify and rationalize what we do as being absolutely essential for severely sensorily deprived children to stimulate and awaken the sensory apparatus so that the normal experiences, those that would occur in natural surroundings, will be meaningful, will be exciting, will be stimulating, because of the opportunities to experience sensory stimulation in a close, confined, perhaps manufactured environment. But it is a delicate balance and it's something which we must be constantly aware of - the fact that we are experimenting with and educating children in surroundings so foreign to those which they must experience when they leave the educational setting, that we must be very sensitive to the carry-over from school to the community and home.

We have an awesome responsibility in working with children who are so severely handicapped, because almost all that happens to children are things we do to children. I'm sure all of you who have worked with deaf-blind children realize the extent to which you manipulate the child, to a much greater degree than you would visually handicapped children, or deaf children, or non-handicapped children. We must keep in mind the extent to which this necessitates our being acutely aware of every activity in which we involve a child, because we are controlling the child's activities.

I recently heard a statement by one of the leaders in the area of education of the blind, reminding us of something which we must never forget: when you are given the responsibility of a severely multi-handicapped child, when you become personally and professionally responsible for the activities of a child who may be sitting in the corner of a room, not responding to any stimulation, seemingly almost totally unaware of sound and visual stimulation, the child at that point in his life has no educational problems. He is functioning at a level which is probably very comfortable for him; he may not be frustrated by the things he cannot do because he will be very well cared for and all of his needs met. When you, as the teacher, establish a goal for that child, you have created a problem. When you have no goals you have no problems - the child has no problems, you have no problems. When a goal is established there is a problem. But be very sure that you remember that the problem is yours and not the child's, and for the severely multi-handicapped child it may be your problem and not his for a long period of time. You establish the goal, you create the problem, and it's your problem.

I have talked to teachers and parents about the fact that our providing educational and developmental services to many of the rubella deaf-blind children whom we are serving has necessitated a broadening of our definition of education to a great extent. We no longer consider education as being those experiences which are traditionally academic in nature. We consider ourselves an educator when we go to school in the morning and we

attempt to teach children how to button their shirts or how to brush their teeth, or how to go to the bathroom, or how to handle a knife or fork. This is education, and this is how it should be, for without this broadened definition there would undoubtedly be many of the children with whom we are now working who would not be eligible for educational services.

We must be willing to accept the fact that our goals for each child must be relatively short term, immediate goals. I'm sure if any one of you had as his goal eventual college enrollment for one of your students, yours could be a very depressing, unrewarding job. We must think in terms of what is needed by each child we work with tomorrow and next week and next month, but seldom further than that. It's obvious, I'm sure, that the need to concentrate on short term goals is as important for parents as it is for teachers and it becomes the teacher's responsibility to counsel and help the parents of deaf-blind children to appreciate and become encouraged by very small gains in development and understanding.

I recall recently talking with a small group of parents of deaf-blind children, most of whom I had talked with several times before. One of the parents continued to express as her major concern what her child would be doing fifteen years from now. It is obvious that it will be very difficult to help the parents, much less the child, when long term goals receive highest priority. This particular mother has a child who is not toilet trained, who is not walking unassisted, who is not capable of eating independently, who has developed no language skill, who is still operating on a very limited basis as far as controlled sensory input and any means of communication is concerned. Yet this mother is concerned about whether her child will go to college, will hold a job, will have a family, etc. I told that mother, and I stress this for all of you, that whether any one of the children with whom you are working ever goes to college is no concern of mine at this time. What is of concern to me is whatever that next developmental step each child needs to take is. Is it identified, is it being worked with, are parents and teachers working together on those small, sometimes tedious, minute developmental steps?

I would like, however, to discuss with you another area of concern to me, which may sound like a contradiction to what I have said. We do need to be concerned with what the future holds for the children with whom we are working, not necessarily as to whether they are college bound, or to what extent they are going to be educable, or what academic level they will be able to achieve, but I think that we need to adopt some kind of philosophical attitude toward what we wish for the children with whom we are working when they reach adulthood. I have long questioned the advisability of continuing to stress economic self-sufficiency for many handicapped people. I have felt that in many instances we must reestablish priorities and objectives in our whole educational

system and our work with children. As we continue through the years, working with deaf-blind children, helping them become more aware of themselves and their surroundings, helping them develop communication systems, helping them learn academically, helping them relate to one another and to adults in appropriate ways, helping them learn the relationship between objects and meanings and the functional use of things around them, what should be our basic educational goal for deaf-blind children? My concern is what children need in order to function effectively and in a worthwhile manner in the community. This does not necessarily mean employment, it does not necessarily mean living independently in an apartment, it means living as efficiently and as self-satisfyingly in whatever environment is appropriate to each child.

As all of you know, one of my major areas of interest, and the area in which I have been prepared, has been the education of visually handicapped children. There are parallels with respect to priorities and what happens in the long haul, between deaf-blind and visually handicapped children. We have recently had to face the fact that despite the excellent educational opportunities we are providing all blind children today, and despite the fact that teachers are more professionally prepared than ever before, more acutely aware of the needs of blind children, despite the fact that curriculum has been adapted and adjusted so that blind children have the benefit of the very best educational program which any child is afforded - despite all of this, some young blind people are still electing to separate themselves from the sighted community when they leave school. There is evidence that in some areas of California, blind communities have been formed. They have, for all practical purposes, removed themselves from society's mainstream, have chosen to live with other blind people in a virtual island with no more contacts than are necessary with sighted people. It would be easy for us in education, on the basis of prevailing philosophy, to look upon these young people as our failures. And yet, as I consider the almost overwhelming task placed on blind people for total social integration, I'm not surprised that this is happening, and what we have done by providing the most effective educational services possible is to show blind children the alternative. Then the decision as to whether they are going to move into the community and become socially and occupationally integrated with sighted society is their decision.

As some of you know, I can become almost livid at educational diagnoses which suggest that four or five year old deaf-blind children will never be able to live independently. To predict that a child at a very young age will be dependent the rest of his life is not only dangerous, it is almost criminal. Teachers and other professionals who may read such a diagnosis may occasionally believe them, and as has been so effectively studied with respect to other labels on children, may then adjust their goals for such

children appropriately. No, I do not like labels, and predictions, and prognosis made in terms of the life-long functioning of young, multihandicapped children. But I would also suggest that we might well become extremely discouraged, frustrated, and depressed if we set our goals too high for many deaf-blind children.

It is not our job in working with young children, to predict what they might be doing during adulthood. But if we consider their potential with respect to economic self-sufficiency, with respect to academic capability, and with respect to productive potential, then it seems to me that we must seriously consider our priorities in their educational program. Surely, it is obvious that body image and self-awareness must precede the ability to read, even though setting such a priority may preclude college for a child. Surely it is obvious that skills of daily living such as eating, dressing, cooking, independent travel, must take priority over the understanding of ancient history. Surely it is obvious that the ability to amuse one's self, to find satisfaction in living, to gain excitement from experience each day, must take precedence over a knowledge of iambic pentameter or the Pythagorean Theorem.

No, we should not label or predict or deal in life-long prognosis for children. Nor should we confuse, rearrange, or present out-of-order those experiences and concepts which will best enable the children with whom we are working to live, to know the joy of living, as Dr. Loban so well described.

APPENDIX A

Institute Speakers

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